# HF175F

## MINIATURE HIGH POWER RELAY

File No.: E133481

File No.: R50412801

File No.: CQC18002196447(Complies with GB/T 21711.1-2023 standard)
CQC18002202622(Complies with GB/T 14536.1-2022, GB/T 21711.1-2023 standard)
CQC23001397485(Complies with GB 4943.1-2022, IEC 61810-1:2015 standard)


### Features

- 2 From A and 2 From C configurations
- Low height,ony 15.7mm
- Contact gap: ⩾0.75mm, with optional specifications
- Contact load: 20A, with optional specifications
- 5kV dielectric strength (between coil and contacts)
- Creepage/clearance distance>10mm，Meets reinforce insulation
- Product in accordance to IEC 60335-1 available
- UL insulation system: Class F

**RoHS compliant**

## CONTACT DATA

| | |
|---|---|
| Contact arrangement | 2A,2C |
| Contact resistance | 100mΩ max.(1A 6VDC) |
| Contact material | $AgSnO_2$ |
| Contact rating(Res.load) | 16A 277VAC |
| Max. switching voltage | 277VAC |
| Max. switching current | 16A |
| Max. switching power | 4432VA |
| Mechanical endurance | 5 x $10^6$OPS |
| Electrical endurance | 5 x $10^4$OPS (2NO:16A 277VAC, General load 85˚C，1s on 9s off) |

## CHARACTERISTICS

| | | |
|---|---|---|
| Insulation resistance | | 1000MΩ (500VDC) |
| Dielectric strength | Between coil & contacts | 5000VAC 1min |
| | Between open contacts | 1000VAC 1min |
| | Between contacts sets | 2500VAC 1min |
| Surge voltage (Between coil &contacts) | | 10kV (1.2 / 50μs) |
| Operate time (at rated. volt.) | | 10ms max. |
| Release time (at rated. volt.) | | 5ms max. |
| Shock resistance | Functional* | 98m/s² |
| | Destructive | 980m/s² |
| Vibration resistance | NO | 10Hz to 55 Hz 1.5mm DA |
| | NC* | 10Hz to 55 Hz 1.5mm DA |
| Humidity | | 5% to 85% RH |
| Ambient temperature | | -40˚C to 85˚C |
| Termination | | PCB |
| Unit weight | | Approx.16.5g |
| Construction | | Flux proofed |

**Notes:** 1) The data shown above are initial values.
2)*means Non length index

## COIL

| | |
|---|---|
| Coil power | Approx. 800mW |
| Holding voltage | 45% to 110%$U_N$(at 23˚C)<br>55% to 100%$U_N$(at 85˚C) |

**Notes:** 1)The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.
2)To avoid overheating and burning, the coil can not be consistently applied to with voltage larger than maximum holding voltage.

## COIL DATA at 23˚C

| Nominal Voltage VDC | Pick-up Voltage VDC max. | Drop-out Voltage VDC min. | Max.* Voltage VDC | Coil Resistance Ω |
|---|---|---|---|---|
| 5 | 3.50 | 0.5 | 7.5 | 31.3 x (1±10%) |
| 6 | 4.20 | 0.6 | 9.0 | 45 x (1±10%) |
| 9 | 6.30 | 0.9 | 13.5 | 101.3 x (1±10%) |
| 12 | 8.40 | 1.2 | 18 | 180 x (1±10%) |
| 24 | 16.80 | 2.4 | 36 | 720 x (1±10%) |
| 48 | 33.60 | 4.8 | 72 | 2880 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.

## SAFETY APPROVAL RATINGS

| | | |
|---|---|---|
| UL/CUL | 2H | 16A 277VAC General use 85˚C<br>TV-8 120VAC 50˚C<br>1HP 240VAC 40˚C<br>Electronic ballast 5A 120VAC 50˚C |
| | 2Z | 16A 277VAC General use 85˚C<br>NO: TV-8 120VAC 50˚C<br>NO: 1HP 240VAC 40˚C<br>NO:Electronic ballast 5A 120VAC 50˚C |

**Notes:** 1) Only typical loads are listed above. Other load specifications can be available upon request.

## ORDERING INFORMATION

| | HF175F / | 12 | -2H | T | F | (XXX) |
|---|---|---|---|---|---|---|
| **Type** | | | | | | |
| **Coil voltage** | 5, 6, 9, 12, 18, 24, 48VDC | | | | | |
| **Contact arrangement** | **2H:** 2 Form A | **2Z:** 2 Form C | | | | |
| **Contact material** | **T:** $AgSnO_2$ | | | | | |
| **Insulation standard** | **F**: Class F | | | | | |
| **Special code**[3)] | **XXX:** Customer special requirement | | **Nil:** Standard | | | |

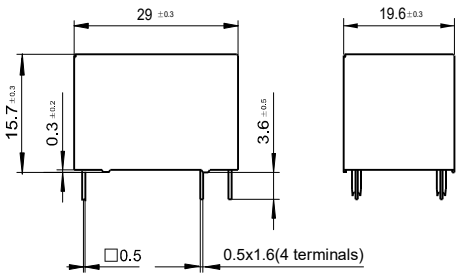
**Notes:** 1)We recommand flux proofed types for a clean environment (free from contaminations like $H_2S$, $SO_2$, $NO_2$,dust,etc.)
2)Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3)The customer special requirement express as special code after evaluating by Hongfa.
e.g.(AL2)indicates that the contact gap of the product is ⩾0.75mm, plastic sealed type(only for 2 Form A type).
(530)indicates a load of 20A.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

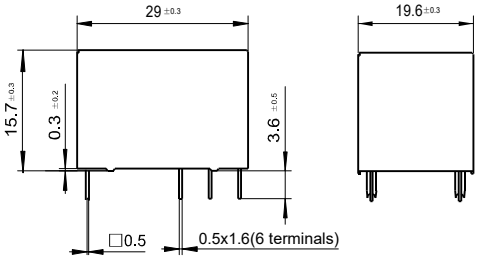
Unit: mm

Outline Dimensions

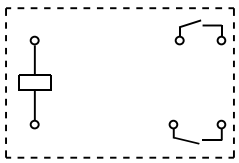
2 Form A

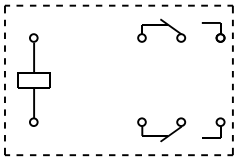



2 Form C




Wiring Diagram





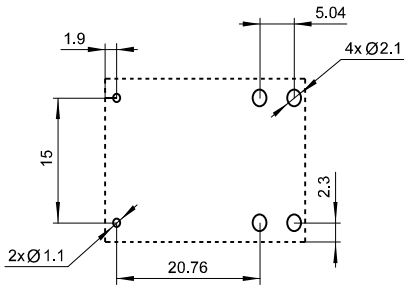
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

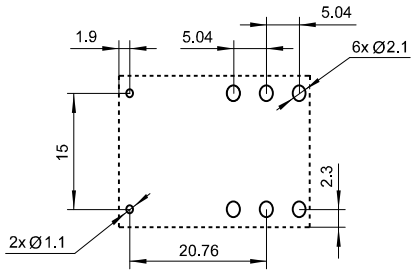
PCB Layout

(Bottom view)

2 Form A




2 Form C




Remark: 1)The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.

2)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.

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

### 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.