

# HFE91-100

# MINIATURE HIGH POWER LATCHING RELAY



File:E133481



File:R50596448



File:CQC23002401797



## Features

- 120A Latching relay
- According to IEC62052-31:UC3
- 0.6mΩ(typ.)contact resistance during electrical endurance
- 10kA short circuit current resistance without burning or explosion ( In integrated circuits, CT or Hall elements are connected in series on the side of terminal 4, as shown in the installation diagram.)

RoHS compliant

## CONTACT DATA

|                                  |   |
|----------------------------------|---|
| Contact arrangement              | 1A(Dual contact),1D(Dual contact)   |
| Contact resistance <sup>1)</sup> | Typical value: <sup>2)</sup> ≤0.3mΩ(100A)   |
| Contact material                 | AgSnO <sub>2</sub>  |
| Contact rating                   | 100A 230VAC;100A 277VAC<br>120A 230VAC  |
| Max. switching voltage           | 400VAC  |
| Max. switching current           | 150A  |
| Max. switching power             | 40000VA   |
| Mechanical endurance             | 1 x 10 <sup>6</sup> ops   |
| Electrical endurance             | 1.2x10 <sup>4</sup> ops(100A 230VAC,COSΦ0.8)<br>6000ops(120A 230VAC,COSΦ0.8)<br>6000ops(100A 277VAC)<br>6x10 <sup>3</sup> ops(making at resistive load<br>≤100A 250VAC,carrying 150A 250VAC,<br>and breaking 100A 250VAC) |

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

2) Typical value: Sampling quantity for contact resistance shall not less than 20 pcs, take the average value from 5 continous measurements for each sample.

## CHARACTERISTICS

|                       |                                     |                     |
|-----------------------|-------------------------------------|---------------------|
| Insulation resistance | 1000MΩ(500VDC)                      |                     |
| Dielectric strength   | Between contact & coil              | 4000VAC 1min        |
|                       | Between contact & auxiliary contact | 4000VAC 1min        |
|                       | Between open contacts               | 2000VAC 1min        |
| Creepage distance     | >8.4mm                              |                     |
| Operate time          | ≤20ms                               |                     |
| Release time          | ≤20ms                               |                     |
| Shock resistance      | Functional                          | 98m/s <sup>2</sup>  |
|                       | Destructive                         | 980m/s <sup>2</sup> |
| Vibration resistance  | 10Hz ~ 55Hz 1.5mm DA                |                     |
| Humidity              | 5% ~ 85% RH                         |                     |
| Ambient temperature   | -25°C ~ 85°C                        |                     |
| Termination           | PCB                                 |                     |
| Unit weight           | Approx. 60g                         |                     |
| Construction          | Flux proofed                        |                     |

Notes: The data shown above are initial values.

## COIL

|             |  |
|-------------|--|
| Rated power | Single coil latching:Approx.3W<br>Double coils latching: Approx.6W |
|-------------|--|

## COIL DATA

23°C

Single coil latching

| Nominal Voltage VDC | Set / Reset Voltage VDC <sup>1)2)</sup> | Pulse Duration ms | Coil Resistance x (1±10%) Ω |
|---------------------|---|-------------------|-----------------------------|
| 6                   | ≤4.8                                    | ≥50               | 12                          |
| 9                   | ≤7.2                                    | ≥50               | 27                          |
| 12                  | ≤9.6                                    | ≥50               | 48                          |
| 24                  | ≤19.2                                   | ≥50               | 192                         |
| 48                  | ≤38.4                                   | ≥50               | 768                         |

Double coils latching

| Nominal Voltage VDC | Set / Reset Voltage VDC <sup>1)2)</sup> | Pulse Duration ms | Coil Resistance x (1±10%) Ω |
|---------------------|---|-------------------|-----------------------------|
| 6                   | ≤4.8                                    | ≥50               | 6+6                         |
| 9                   | ≤7.2                                    | ≥50               | 13.5+13.5                   |
| 12                  | ≤9.6                                    | ≥50               | 24+24                       |
| 24                  | ≤19.2                                   | ≥50               | 96+96                       |
| 48                  | ≤38.4                                   | ≥50               | 384+384                     |

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

2) The above set voltage, reset voltage are the test value for relay without load. Please use 1~1.5 times of rated voltage to drive the relay for your application.



HONGFA RELAY

ISO9001、IATF16949、ISO14001、ISO45001、IECQ QC 080000、ISO/EC 27001

2025 Rev.1.00

## ORDERING INFORMATION

|                                   |   |
|-----------------------------------|---|
| Type                              | HFE91-100 /12 -SH E T -L2 -R (XXX)  |
| Coil voltage                      | 6,9,12,24,48 VDC  |
| Contact arrangement <sup>1)</sup> | SH: 1 Form A(Dual contact)<br>SD: 1 Form B (Dual contact)                                   |
| Auxiliary contact                 | Nil: No auxiliary contact<br>E: The auxiliary contact state is consistent with main contact |
| Contact material                  | T: AgSnO <sub>2</sub>   |
| Coil type                         | L1: Single coil latching L2: Double coils latching  |
| Polarity                          | R: Reverse polarity Nil: Standard polarity  |
| Special code <sup>2)</sup>        | XXX:Customer special requirement  |

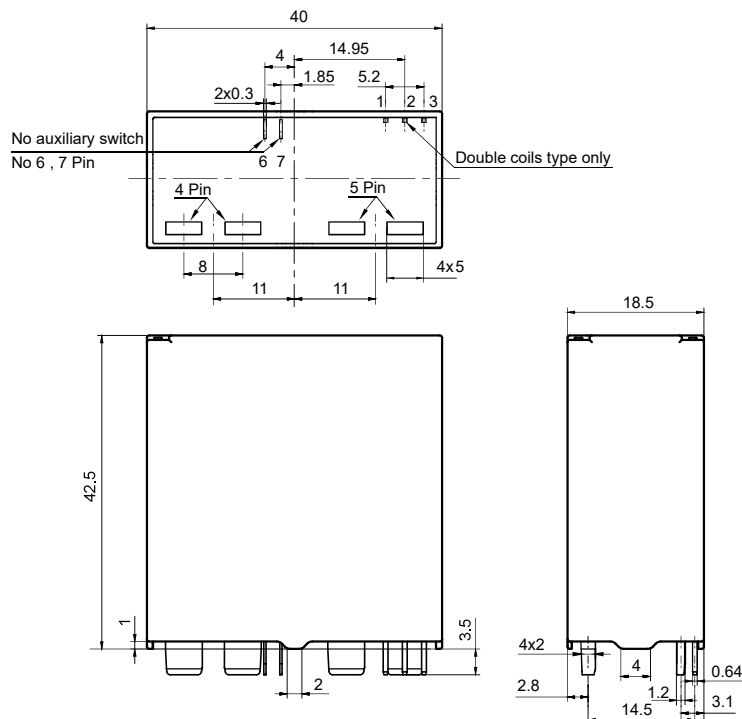
Notes: 1) SH means that relay is on the "reset" status when delivery.

2) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS,INSTALLATION DIAGRAM,WIRING DIAGRAM

Unit: mm

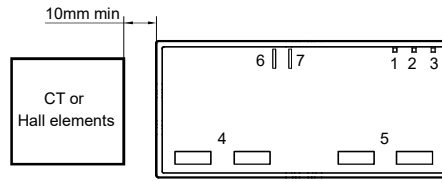
### Outline Dimensions



### Remark:

- 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.

Installation Diagram

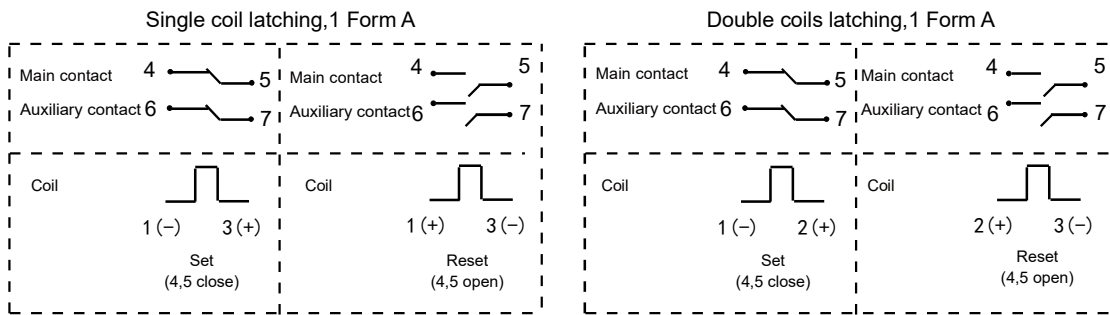


Notes: In integrated circuits, CT or Hall elements are connected in series on the side of terminal 4.

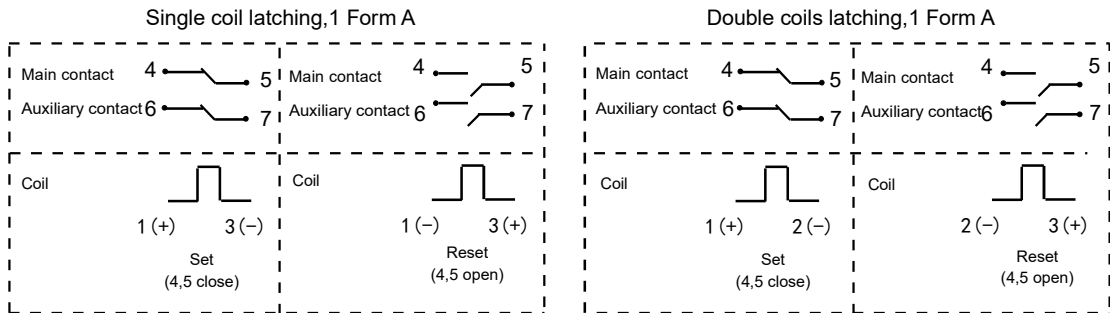
WIRING DIAGRAM

1 Form A

Standard polarity

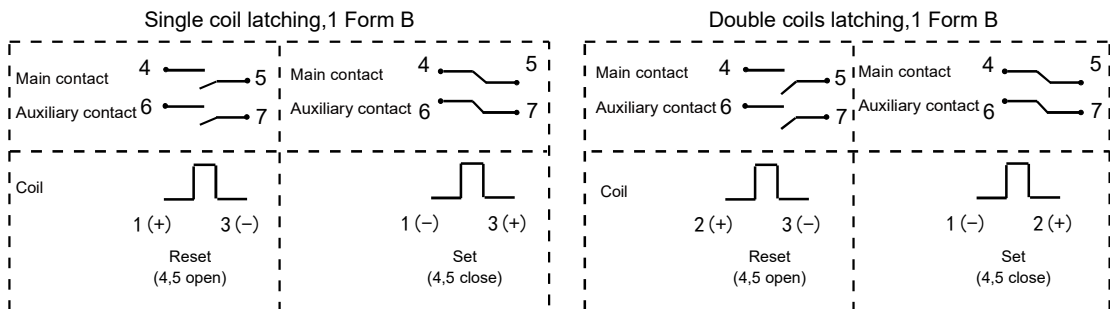


Reverse polarity



Standard polarity

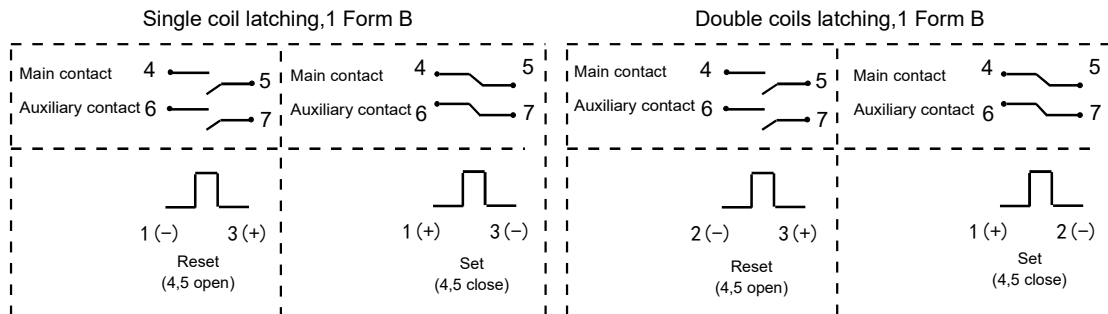
1 Form B



WIRING DIAGRAM

1 Form B

Reverse polarity



CAUTIONS

1. Latching relay is on the "reset" or "set" status when delivery, with the consideration of shock risen from transit and relay mounting, relay would be changed to "set" or "reset" status, therefore, when application ( connecting the power supply), please reset the relay to "set" or "reset" status on request.
2. In order to maintain "set" or "reset" status, energized voltage applied across the coil should reach the rated voltage, impulse width should be 5 times more than "set" or "reset" time. Do not energize voltage to "set" coil and "reset" coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. The recommended soldering temperature range is 257°C~263°C with the duration of 3~7s. It is not suggested to apply reflow soldering method, if it is required indeed, please contact with our technicians.

The specification is for reference only. 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.