HFE10-90 MINIATURE HIGH POWER LATCHING RELAY

c UL us
File No.:E134517

File No.:R50610305



Features

- Contact rating of 90A
- Electrical endurance capability: breaking under 2000A for 0.3ms for 300 times
- (A81):Switching without load
- (999):DC switching capability:90A 60VDC
- (A12): With manual switch

RoHS compliant

CONTACT DATA

Contact arrangement	1A,1B
Contact resistance[1)]	Typical value: [2)] ≤2mΩ(90A)
Contact material	$AgSnO_2$
Contact rating	**(A81):Switching without load:** Withstand over current 2000A, 0.3ms for 300 ops, can breaking. Making capacity 90A 250VAC and breaking for 5x10⁴ops. (999):90A 60VDC, 1x10⁴ops **Standard products (non-plastic sealed type,40°C) :** Resistive:90A 250VAC 6x10³ops **Standard products(sealed type,40°C):** Making at resistive load 60A 250VAC, carrying 90A 250VAC, and breaking 60A 250VAC for 6x10³ops
Max. switching voltage	440VAC
Max. switching current	90A
Max. switching power	22500W
Mechanical endurance	5 X 10⁵ops
Electrical endurance	See “contact rating”

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.

COIL

Rated power	Single coil latching:Approx.3W Double coils latching: Approx.6W

COIL DATA 23°C

Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC [1) 2)]	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

CHARACTERISTICS

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between contact & coil	4000VAC 1min
	Between open contacts	1500VAC(50/60Hz,1min)
Creepage distance		8mm
Operate time		≤15ms
Release time		≤15ms
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz ~ 55Hz 1.5mm DA
Humidity		5% ~ 85% RH
Ambient temperature		-40°C ~ 85°C
Termination		PCB
Unit weight		Approx. 40g
Construction		Plastic sealed;Flux proofed

Notes: The data shown above are initial values.

COIL DATA

23˚C

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC 1)2)	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.

SAFETY APPROVAL RAINGS

UL/CUL	Resistive: carrying 90A, making 50A 277VAC 85°C Resistive: carrying 90A, making 30A 277VAC 85°C Resistive: 90A 277VAC(only carrying) 85°C Resistive: 100A 10VDC 90°C
TUV	Resistive: 90A 60VDC Resistive: carrying 90A,making 50A 277VAC Resistive: 90A 277VAC(only carrying)

ORDERING INFORMATION

HFE10-90 /12 -H S T -L1 -R (XXX)

Type	
Coil voltage	6,9,12,24,48 VDC
Contact arrangement 1)	**H:** 1 Form A **D:** 1 Form B
Construction	**S:** Plastic sealed **Nil:** Flux proofed
Contact material	**T:** $AgSnO_2$
Coil type	**L1:** Single coil latching **L2:** Double coils latching
Polarity	**R:** Reverse polarity **Nil:** Standard polarity
Special code 2)	**XXX:** Customer special requirement **(A81):** Switching without load **(A12):**With manual switch **(AH8):** Meet the sealing requirements after wave soldering of plastic sealed type **(999):**DC switching capability: 90A/60VDC

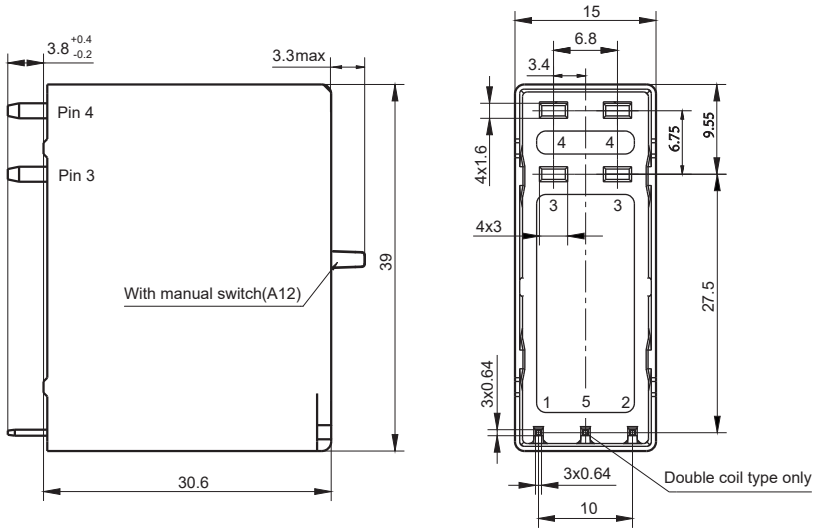
Notes: 1) H means that relay is on the "reset" status when delivery; D means that relay is on the "set" status when delivery. If no speical required by customer, we will keep the relay on the "set" status when delivery.
2) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

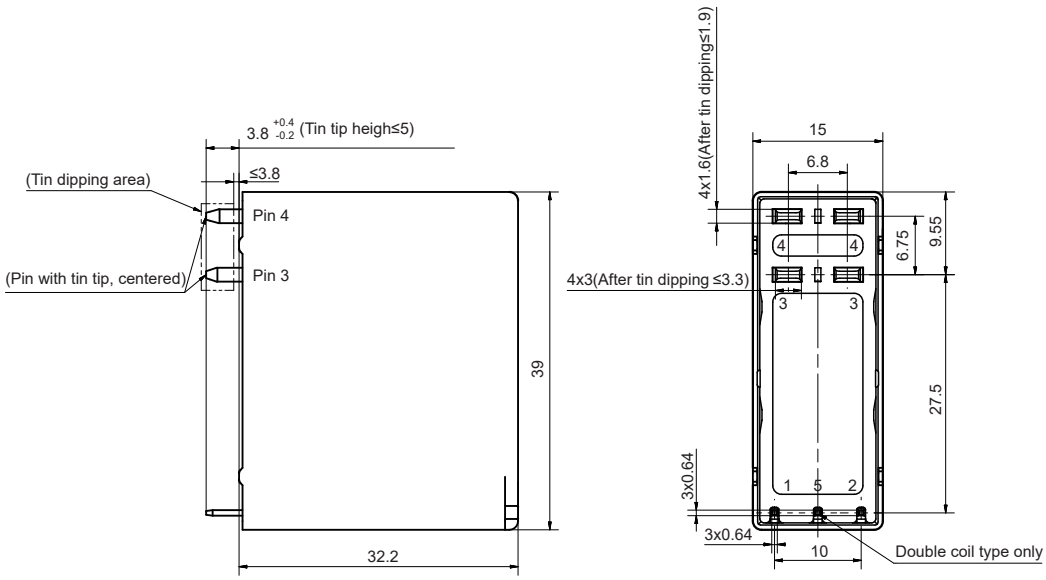
Unit: mm

Outline Dimensions

HFE10-90



HFE10-90(AH8)



Remark:

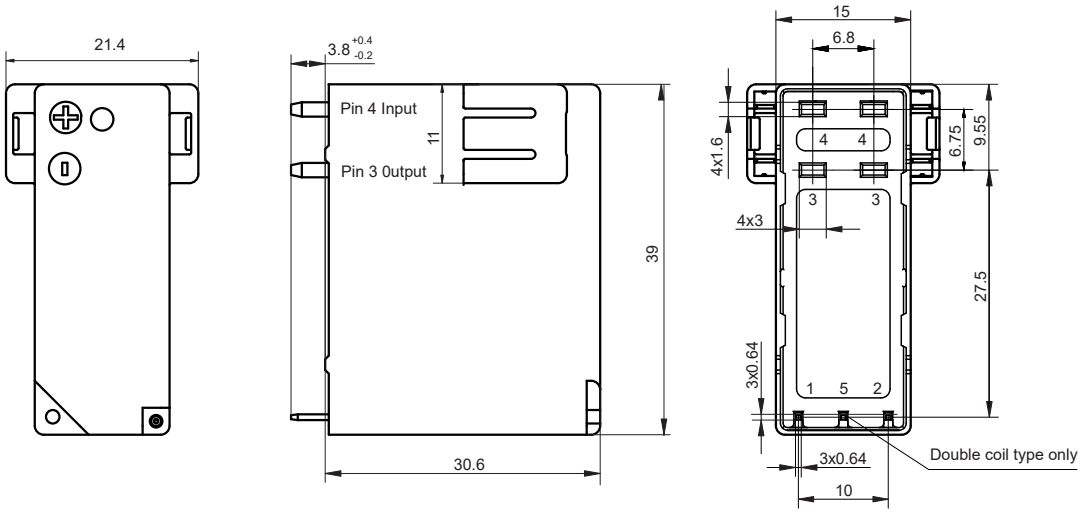
1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be±0.2mm; outline dimension ＞1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension ＞5mm, tolerance should be±0.4mm.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Outline Dimensions

HFE10-90(999)

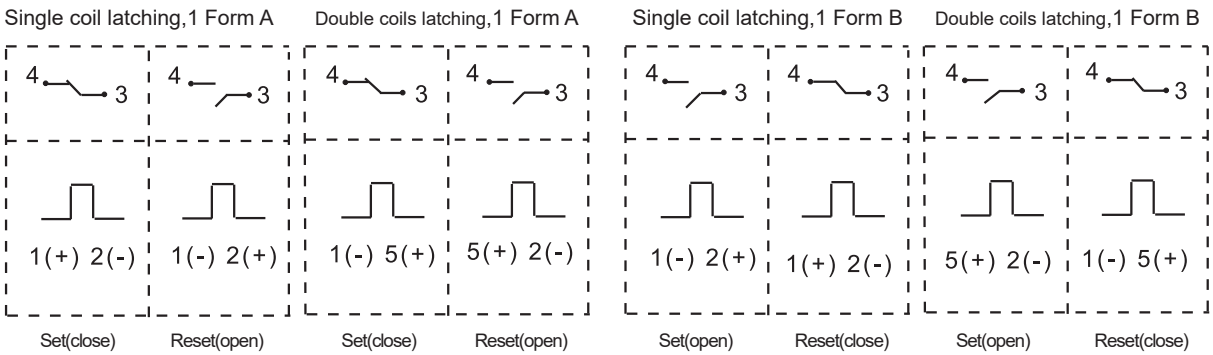


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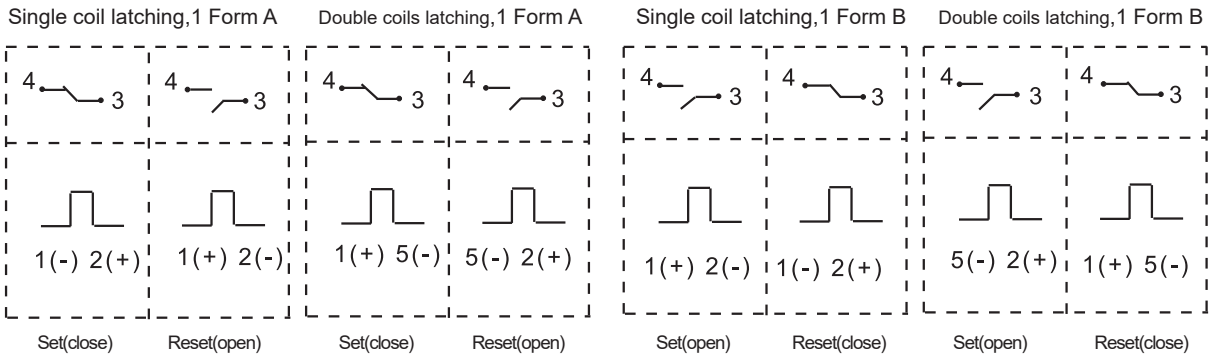
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Wiring Diagram

Standard polarity



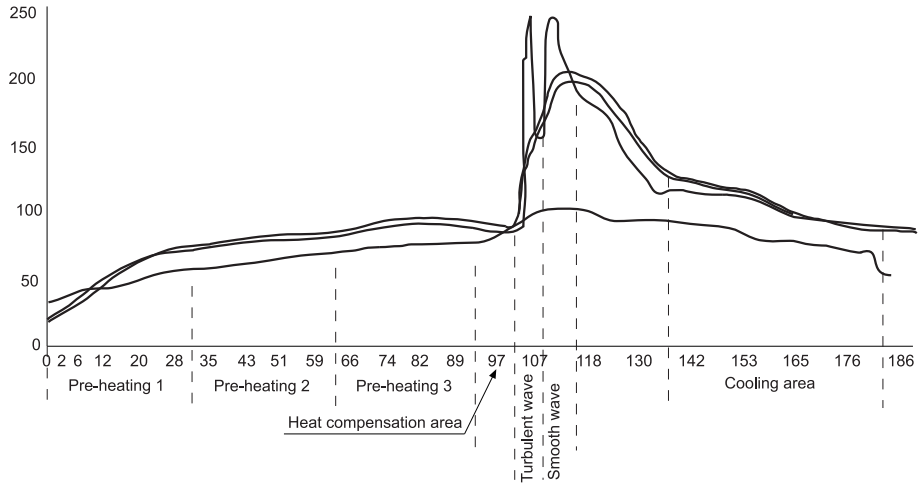
Reverse polarity



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 250±10°C with the duration of 2～5s for PCB termination. It is not suggested to apply reflow soldering method, if it is required indeed, please contact with our technicians. It is general required that the wave soldering temperature at 250°C shall not more than 2s,The below chart is the wave soldering temperature distribution chart we recommended for your reference.

Wave soldering temperature distribution chart



Disclaimer

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.

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