HFE10-90 MINIATURE HIGH POWER LATCHING RELAY

Features

● Contact rating of 90A
● Latching relay
● Electrical endurance capability: breaking under 2000A for 0.3ms for 300 times
● Load capability of 60VDC 100A
● Inrush current withstand capability up to 500A for 2ms

RoHS compliant

CONTACT DATA

Contact arrangement	1A,1B
Contact resistance[1]	Typical value: [2] ≤10mΩ(1A 24VDC)
Contact material	AgSnO$_2$
Contact rating	Res. load:90A 277VAC,1x10^{4}ops DC load:100A 60VDC,1x10^{4}ops
Max. switching voltage	440VAC
Max. switching current	90A
Max. switching power	22500W
Mechanical endurance	1 X 10^{6}ops
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.

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/s^2
	Destructive	980m/s^2
Vibration resistance		10Hz ~ 55Hz 1.5mm DA
Humidity		5% ~ 85% RH
Ambient temperature		-40°C ~ 70°C
Termination		PCB
Unit weight		Approx. 40g
Construction		Plastic sealed,Flux proofed

Notes: The data shown above are initial values.

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 [1][2] VDC	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 [1][2] VDC	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.

ORDERING INFORMATION

	HFE10-90	/12	-H	S	T	-L1	-R	(XXX)
Type								
Coil voltage	5,6,9,12,24,48 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 (W): Relay with approx.1.5mm contact gap; (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.
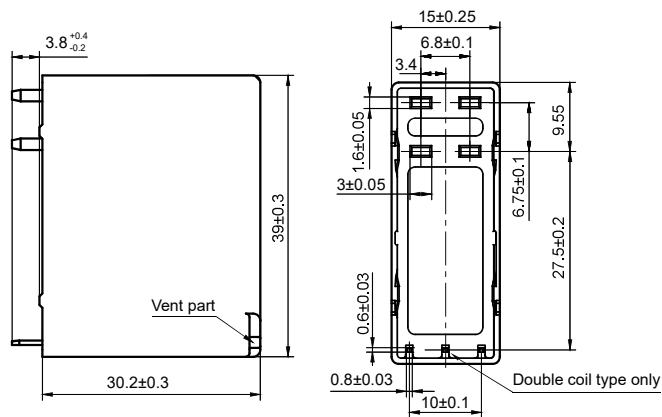
2) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS AND WIRING DIAGRAM
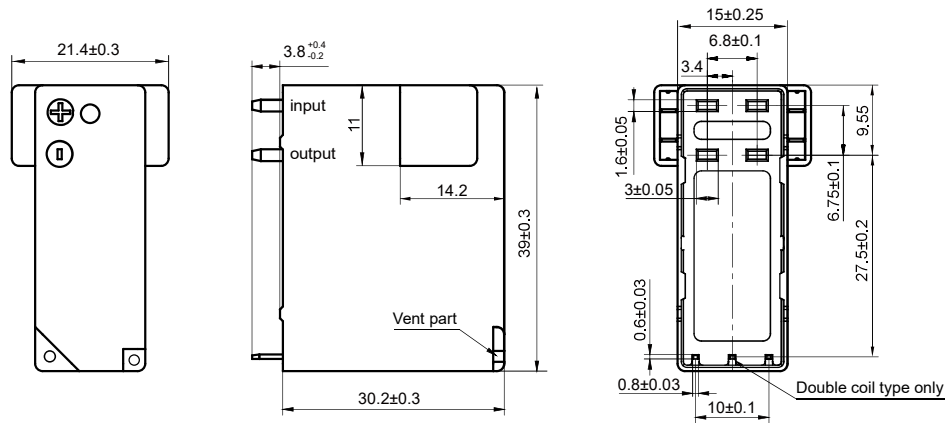
Unit: mm

Outline Dimensions

HFE10-90;HFE10-90(W)

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.

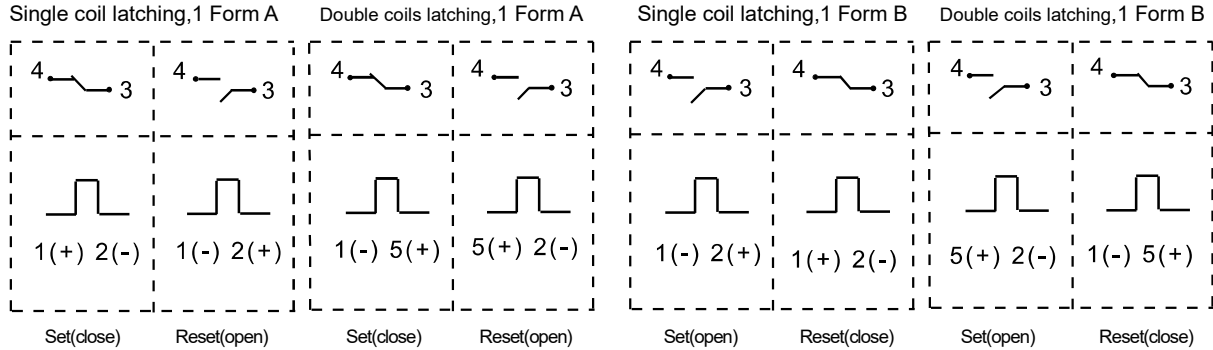## OUTLINE DIMENSIONS AND WIRING DIAGRAM
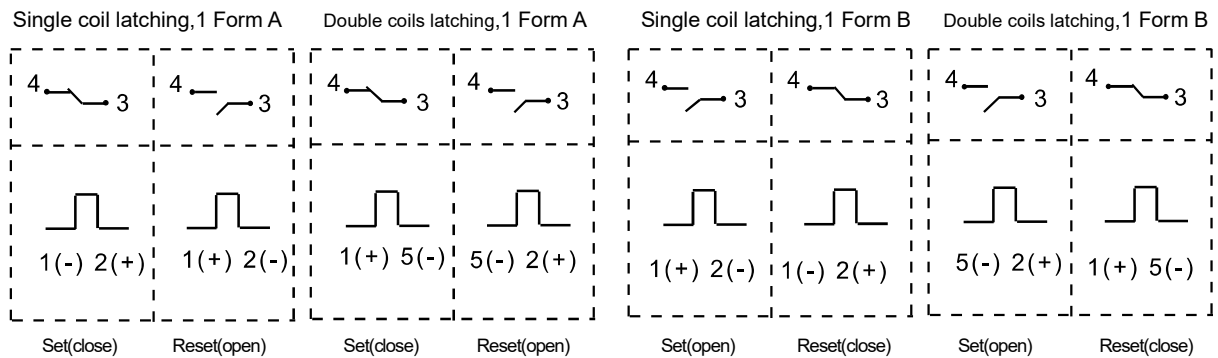
Outline Dimensions

HFE10-90(999)

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.

Wiring Diagram

Standard polarity

| Single coil latching,1 Form A | | Double coils latching,1 Form A | | Single coil latching,1 Form B | | Double coils latching,1 Form B | |

Reverse polarity

| Single coil latching,1 Form A | | Double coils latching,1 Form A | | Single coil latching,1 Form B | | Double coils latching,1 Form B | |

CAUTIONS

1. The recommended soldering temperature range is 250±10°C with the duration of 2～5s. 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.

2. 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.

3. 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.

Wave soldering temperature distribution chart

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.