

HFE10-70

MINIATURE HIGH POWER LATCHING RELAY



Features

- Contact rating of 70A
- Latching relay
- Electrical endurance capability: breaking under 2000A for 0.3ms for 300 times
- Inrush current withstand capability up to 500A for 2ms

RoHS compliant

CONTACT DATA

Contact arrangement	1A, 1B, 1C
Contact resistance ¹⁾	Typical value: ²⁾ ≤10mΩ (1A 24VDC)
Contact material	AgSnO ₂
Contact rating	1A: standard ballast: 20A 277VAC 3x10 ⁴ ops Electronic rectifier: 16A 277VAC 3x10 ⁴ ops Resistive: 70A 277VAC 1x10 ⁵ ops Motor: 3HP 277VAC 3x10 ⁴ ops 1C: Resistive: 70A 277VAC 3x10 ⁴ ops
Max. switching voltage	440VAC
Max. switching current	70A
Max. switching power	30800W
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 continuous 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 ~ 85°C
Termination	PCB
Unit weight	Approx. 40g
Construction	Plastic sealed, Flux proofed

Notes: The data shown above are initial values.



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2021 Rev.1.00

COIL

Rated power	Standard Type	Single coil latching: Approx. 3W Double coils latching: Approx. 6W
	Sensitive type	Single coil latching: Approx. 1.5W Double coils latching: Approx. 3W

COIL DATA

23°C

Standard Type-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

Standard Type-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

Sensitive type-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	24
9	≤7.2	≥50	54
12	≤9.6	≥50	96
24	≤19.2	≥50	384
48	≤38.4	≥50	1536

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.

COIL DATA

23°C

Sensitive type-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	12+12
9	≤7.2	≥50	27+27
12	≤9.6	≥50	48+48
24	≤19.2	≥50	192+192
48	≤38.4	≥50	768+768

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

Type	HFE10-70 /12 -Z S T -L1 -R (XXX)
Coil voltage	5,6,9,12,24,48 VDC
Contact arrangement	H: 1 Form A D: 1 Form B Z: 1 Form C
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 ¹⁾	XXX:Customer special requirement

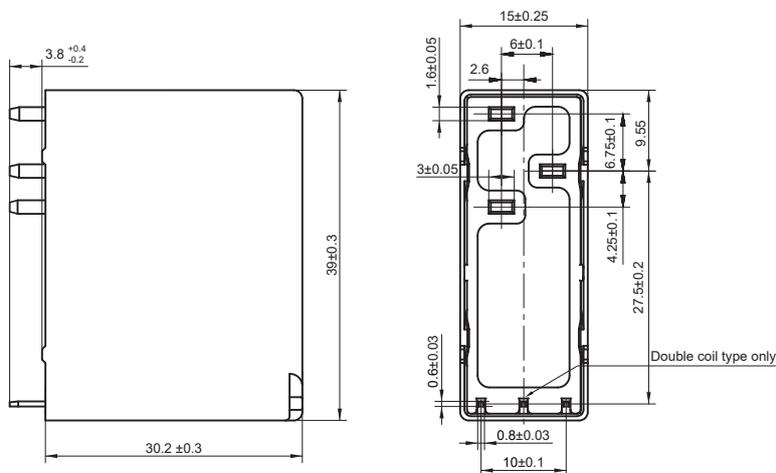
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Outline Dimensions

HFE10-70/□-Z□T□□

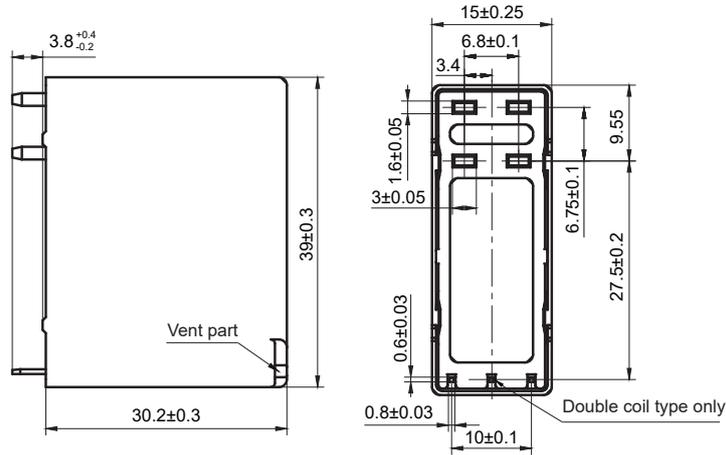


OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Outline Dimensions

HFE10-70/□-H□T□□
HFE10-70/□-D□T□□



Remark:

1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.

WIRING DIAGRAM

Wiring Diagram

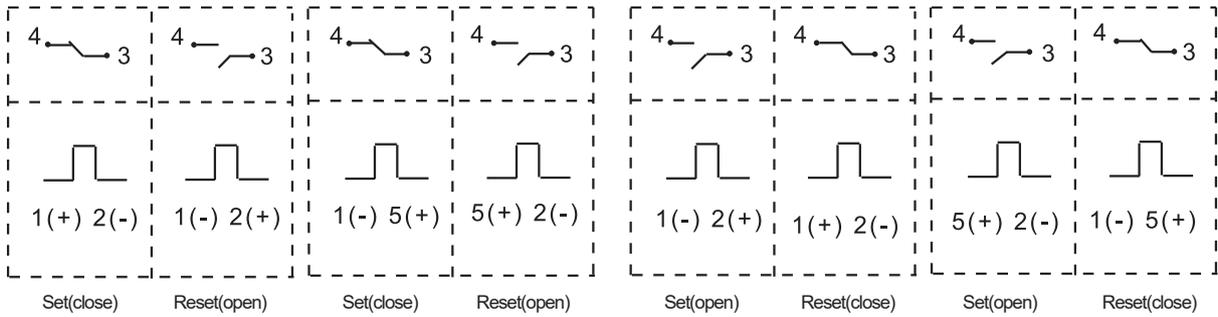
Standard polarity

Single coil latching, 1 Form A

Double coils latching, 1 Form A

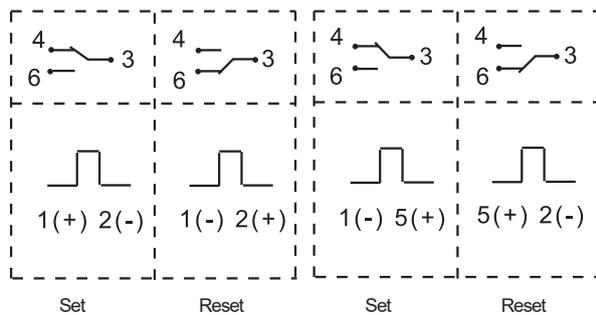
Single coil latching, 1 Form B

Double coils latching, 1 Form B



Single coil latching, 1 Form Z

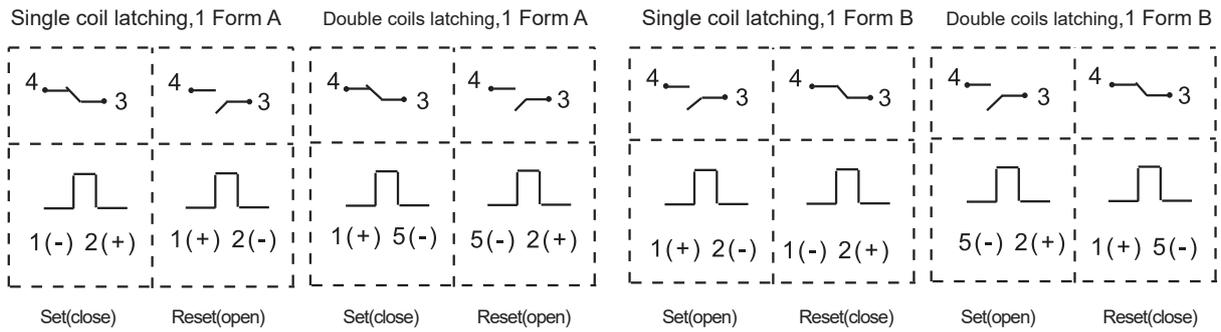
Double coils latching, 1 Form Z



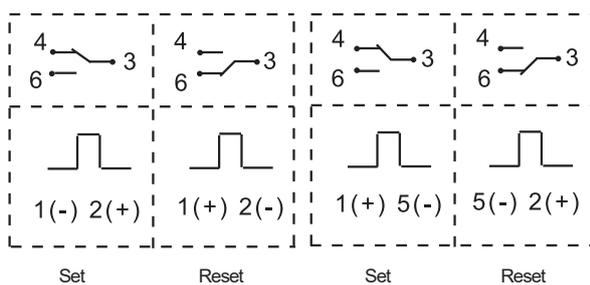
WIRING DIAGRAM

Wiring Diagram

Reverse polarity



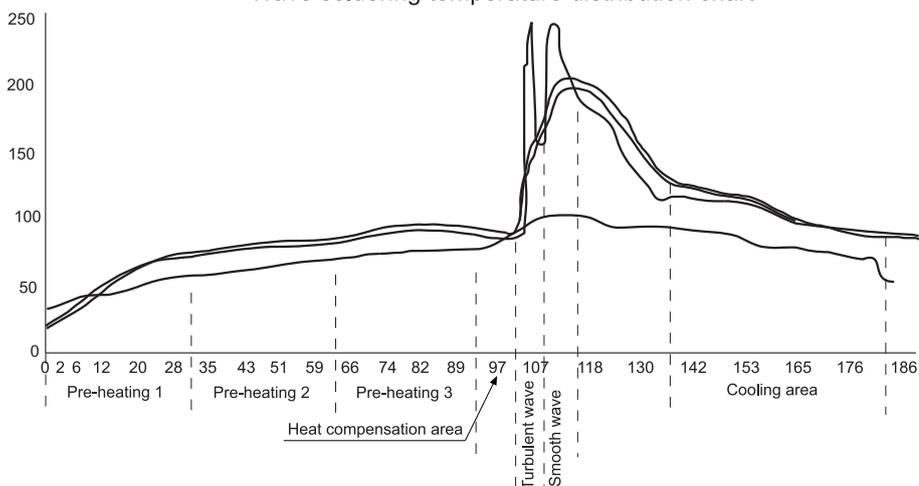
Single coil latching, 1 Form Z Double coils latching, 1 Form Z



NOTICE

- The recommended soldering temperature range is $250 \pm 10^{\circ}\text{C}$ 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.
- 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.
- 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



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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