

HFE15

MINIATURE HIGH POWER LATCHING RELAY



File No.: E134517



File No.: 40045248



File No.: CQC19002223146



Features

- Latching relay
- 20A switching capacity
- Lamp load capacity up to 10A
- Inrush current capacity up to 430A for 1.5ms
- (AA1):32A switching capacity

RoHS compliant

CONTACT DATA

Contact arrangement	1A, 1B, 1C
Contact resistance ¹⁾	20mΩ max.(at 1A 24VDC)
Contact material	AgSnO ₂
Contact rating	1A,1B:20A 250VAC, 1x10 ⁶ ops(Resistive) 25A 250VAC,5x10 ⁴ ops(Resistive) 10A 250VAC C=140uF, 3x10 ⁴ ops(Capacitive) 10A 250VAC cosΦ=0.4, 3x10 ⁴ ops(Inductive) 20A 30VDC,3x10 ⁴ ops(Resistive) 15A 45VDC,6x10 ³ ops(Resistive) 16A 250VAC,1x10 ⁵ ops(AC-1) 12.5A 400VAC,1x10 ⁵ ops(AC-1) 10A 277VAC,6x10 ³ ops (Electronic ballast) 1C:20A 250VAC,5x10 ⁴ ops(Resistive)
Max. switching voltage	400VAC
Max. switching current	25A
Max. switching power	5000VA
Max.continuous current	20A
Mechanical endurance	1 x 10 ⁶ ops
Electrical endurance	See "contact rating"

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

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1 min
	Between open contacts	(AA1):3000VAC 1min Normal:1000VAC 1min
Creepage distance	8mm	
Impulse voltage	12kV min.	
Operate time (at nomi. volt.)	15ms max.	
Release time (at nomi. volt.)	15ms max.	
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.23g	

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

COIL

Rated power	Single coil latching: Approx. 0.7W Double coils latching: Approx. 1.5W
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COIL DATA

at 23°C

Single coil latching			
Nominal Voltage VDC	Set / Reset Voltage VDC ¹⁾²⁾ max.	Pulse Duration ms min.	Coil Resistance x (1±10%)Ω
3	≤2.4	≥50	12.5
5	≤4.0	≥50	34.5
6	≤4.8	≥50	50
9	≤7.2	≥50	112.5
12	≤9.6	≥50	200
24	≤19.2	≥50	800
32	≤25.6	≥50	1460
48	≤38.4	≥50	3200

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC ¹⁾²⁾ max.	Pulse Duration ms min.	Coil Resistance x (1±10%)Ω
3	≤2.4	≥50	6+6
5	≤4.0	≥50	17.5+17.5
6	≤4.8	≥50	25+25
9	≤7.2	≥50	54+54
12	≤9.6	≥50	100+100
24	≤19.2	≥50	400+400
32	≤25.6	≥50	680+680
48	≤38.4	≥50	1600+1600

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 RATINGS

VDE	1A, 1B	Resistive: 20A 250VAC Incandescent lamp: 2500W 250VAC
	1C	Resistive: 20A 250VAC
UL	1A, 1B	Resistive: 20A 250VAC Resistive: 15A 45VDC Electronic ballast: 10A 277VAC

Notes: Only typical loads are listed above.other load specifications can be available upon request.



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

2025 Rev.1.00

ORDERING INFORMATION

HFE15		-1	/12	-1H	T	-L2	R	(XXX)
Type	Standard							
Manual wwitch	Nil: None -1: With manual switch							
Coil voltage	3,5,6,9,12,24,32,48 VDC							
Contact arrangement ¹⁾	1H: 1 Form A 1D: 1 Form B 1Z: 1 Form C							
Contact material	T: AgSnO ₂							
Coil type	L1: Single coil latching L2: Double coils latching							
Polarity	R: Reverse polarity Nil: Standard polarity							

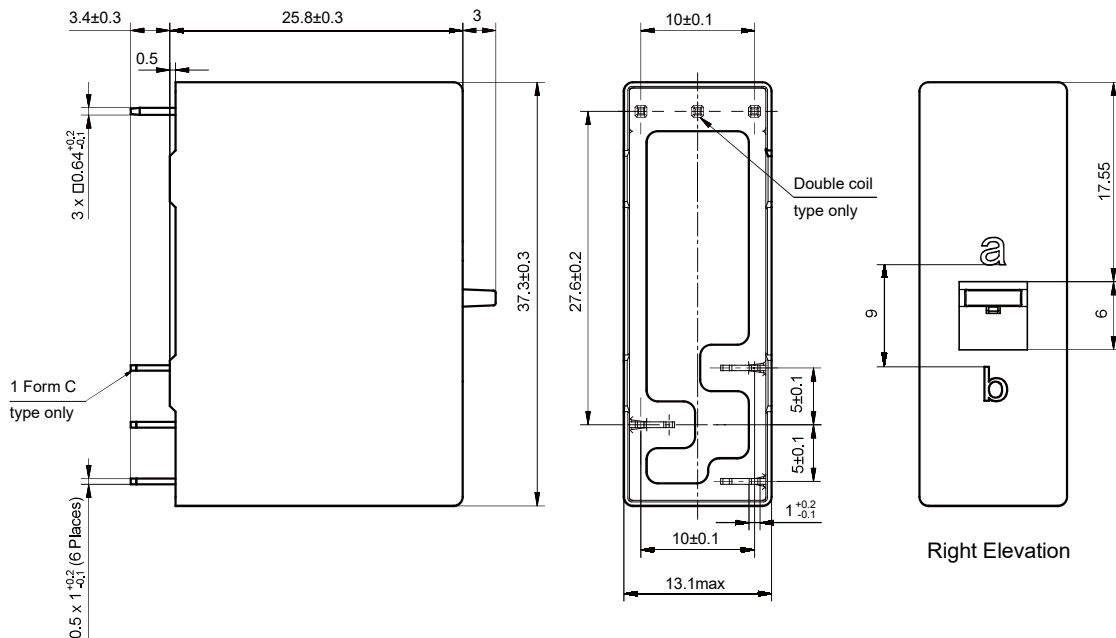
Special code²⁾ **XXX:** Customer special requirement (**A81**): switching without load (**AA1**):32A switching capacity

- Notes:1) 1H means that relay is on the "reset" status when delivery; 1D 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) If water cleaning is required after the relay is assembled on PCB,please contact us for suggestion about suitable parts.
 3) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM

Unit: mm

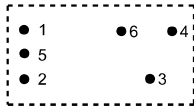
Outline Dimensions



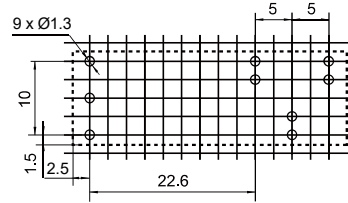
Remark:

- 1) In case of no tolerance shown in outline dimension: outline dimension ≤ 1 mm, tolerance should be ± 0.2 mm; outline dimension > 1 mm and ≤ 5 mm, tolerance should be ± 0.3 mm; outline dimension > 5 mm, tolerance should be ± 0.4 mm.
- 2) The tolerance without indicating for PCB layout is always ± 0.1 mm.
- 3) The width of the gridding is 2.54mm.

Wiring Diagram



PCB Layout (Bottom view)



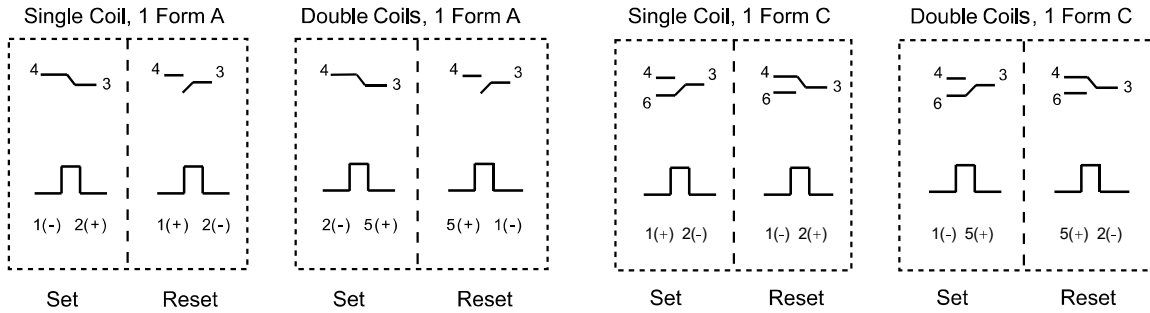
1 Form C

Contact position		
Manual switch position	(a)	(b)

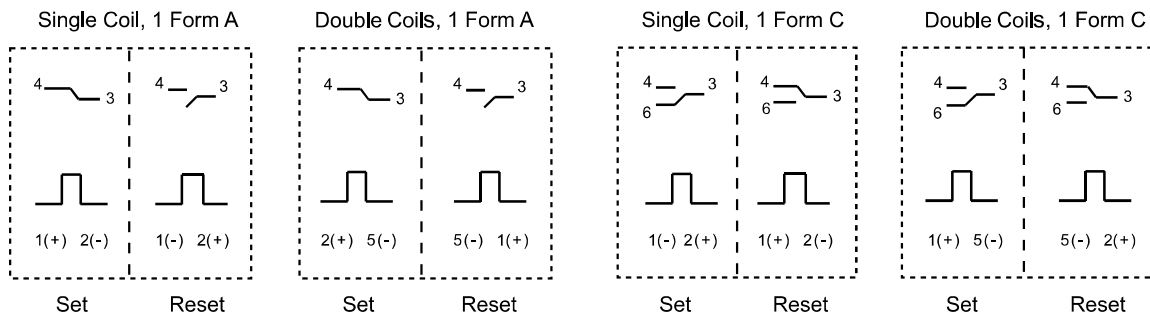
1 Form A

Contact position		
Manual switch position	(a)	(b)

Standard polarity



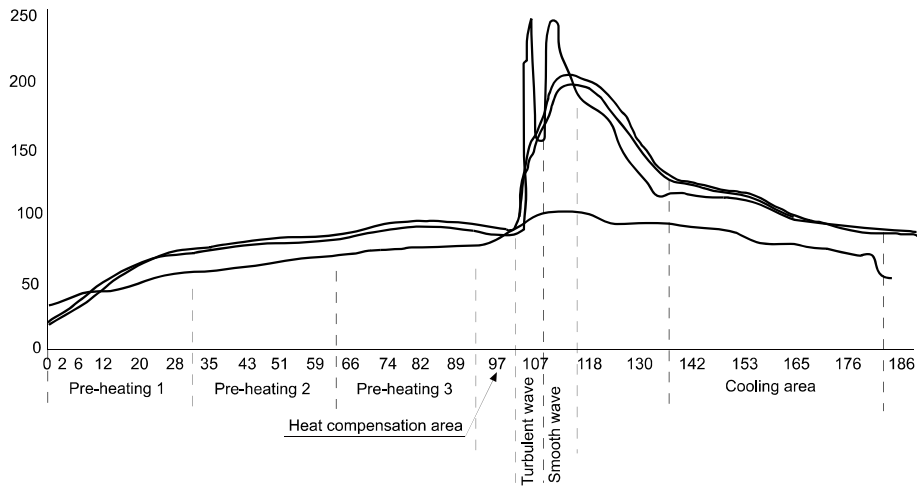
Reverse polarity



CAUTIONS

1. 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.
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



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.