

HFE10

MINIATURE HIGH POWER LATCHING RELAY



File No.:E134517



File No.: CQC06017016719



Features

- 50A switching capability
- Lamp load up to 5000W
- Capacitor load up to 200uF (Min. inrush current at 500A/10s)
- Creepage distance: 8mm
- Dielectric strength: more than 4000VAC (between coil and contacts)
- Plastic sealed and flux proofed types available
- Manual switch function available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (39.0 x 15.0 x 30.2)mm

CONTACT DATA

Contact arrangement	1A, 1B, 1C
Contact resistance	50mΩ (at 1A 24VDC)
Contact material	AgSnO ₂ , AgCdO
Contact rating	1A: 50A 250VAC, 1 x 10 ⁵ OPS(Resistive) 5000W 220VAC, 3 x 10 ⁴ OPS (Incandescent & fluorescent lamp) 5HP 250VAC, 3 x 10 ⁴ OPS(Motor) 1C: 40A 250VAC, 3 x 10 ⁴ OPS(Resistive)
Max. switching voltage	440VAC
Max. switching current	50A
Max. switching power	1A: 12500VA / 1C: 10000VA
Max. continuous current	50A
Mechanical endurance	1 x 10 ⁶ OPS
Electrical endurance	See rated load

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
Creepage distance (input to output)	1A: 8mm 1C: 6mm	
Pulse width of coil	50ms min. (Recommend: 100ms to 200ms)	
Operate time (at nomi. volt.)	15ms max.	
Release time (at nomi. volt.)	15ms max.	
Max. operate frequency	1A: 20cycles/min 1C: 10cycles/min	
Shock resistance	Functional	98m/s ²
	Destructive	980m/s ²
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Humidity	98% RH, 40°C	
Ambient temperature	-40°C to 70°C	
Storage temperature	-40°C to 100°C	
Termination	PCB	
Unit weight	Approx. 32g	
Construction	Plastic sealed, Flux proofed	

COIL DATA

at 23°C

Nominal Voltage VDC	Set / Reset Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance x (1±10%) Ω
5	4	6.5	16.8
6	4.8	7.8	24
9	7.2	11.7	54
12	9.6	15.6	96
24	19.2	31.2	384
48	38.4	62.4	1536
5	4	6.5	8.4+8.4
6	4.8	7.8	12+12
9	7.2	11.7	27+ 27
12	9.6	15.6	48+48
24	19.2	31.2	192+192
48	38.4	62.4	768+768

Notes: The data shown above are initial values.

SAFETY APPROVAL RATINGS

UL/CUL (AgSnO ₂)	1 Form A	Resistive: 50A 277VAC Tungsten: 5000W 240VAC
	1 Form C	40A 277VAC

Notes: Only some typical ratings are listed above. If more details are required, please contact us.

COIL

Coil power	1 coil latching: 1.5W; 2 coils latching: 3.0W
------------	---



HONGFA RELAY

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

ORDERING INFORMATION

Type	HFE10 -1/ 12 -H 1 S T -L2 -R (XXX)							
Version	1: No auxiliary convexity, no manual switch 2: No auxiliary convexity, with manual switch 3: With auxiliary convexity, no manual switch 4: With auxiliary convexity, with manual switch 5: No auxiliary convexity, with manual switch, the reverse action							
Coil voltage	5, 6, 9, 12, 24, 48VDC							
Contact form ¹⁾	H: 1 Form A D: 1 Form B Z: 1 Form C							
Termination ²⁾	1: Extra long terminal 5: Wide terminal Nil: PCB terminal 6: Bending extra long terminal 7: Double PCB terminal							
Construction ³⁾	S: Plastic sealed (Only for HFE10-1 & HFE10-3) Nil: Flux proofed							
Contact material ⁴⁾	T: AgSnO ₂ Nil: AgCdO (No UL approval)							
Sort	L1: 1 coil latching				L2: 2 coils latching			
Polarity	R: Reverse polarity				Nil: Positive polarity			
Customer special code								

Notes: 1) H means that relay is on the "reset" status when delivery; D means that relay is on the "set" status when delivery.

2) The 1 type, 5 type, 6 type and 7 type is only for HFE10-1/□□□□H, HFE10-2/□□□□H.

3) Under the ambience with dangerous gas like H₂S, SO₂ or NO₂, plastic sealed type is recommended; Please test the relay in real applications. If the ambience allows, flux proofed type is preferentially recommended.

If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

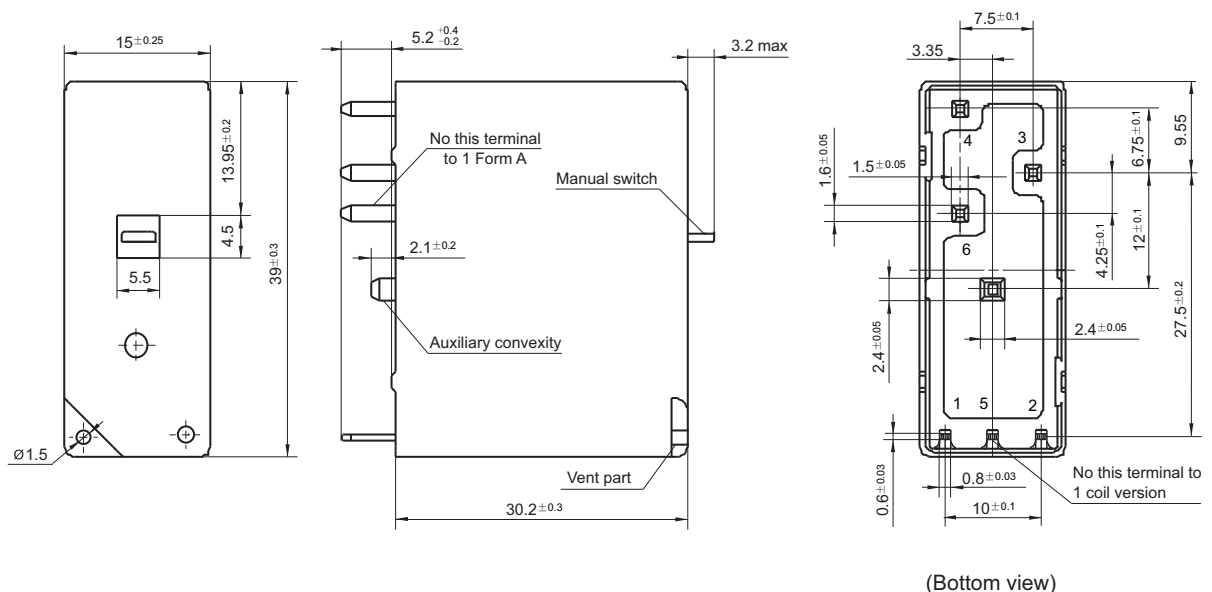
4) As to lamp load, capacitive load, motor load, please choose AgSnO₂ contact material.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Outline Dimensions

HFE10-1, HFE10-2, HFE10-3, HFE10-4

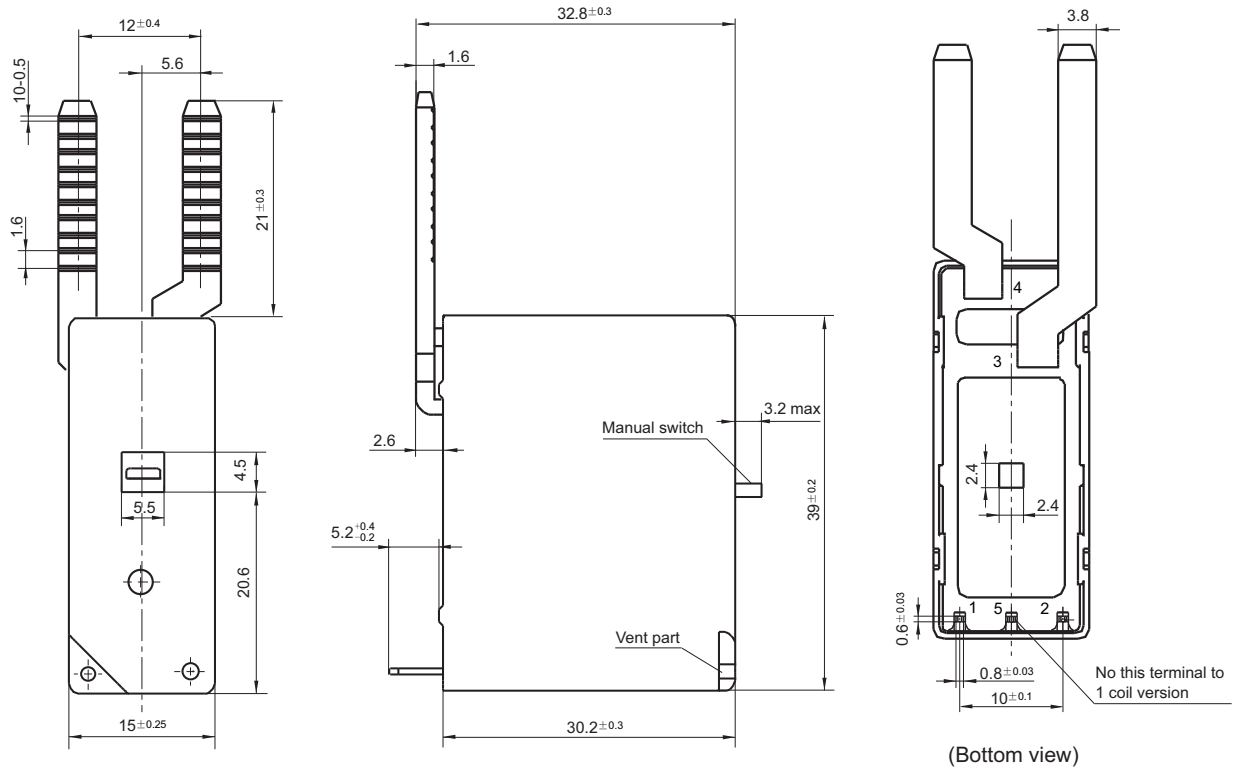


(Bottom view)

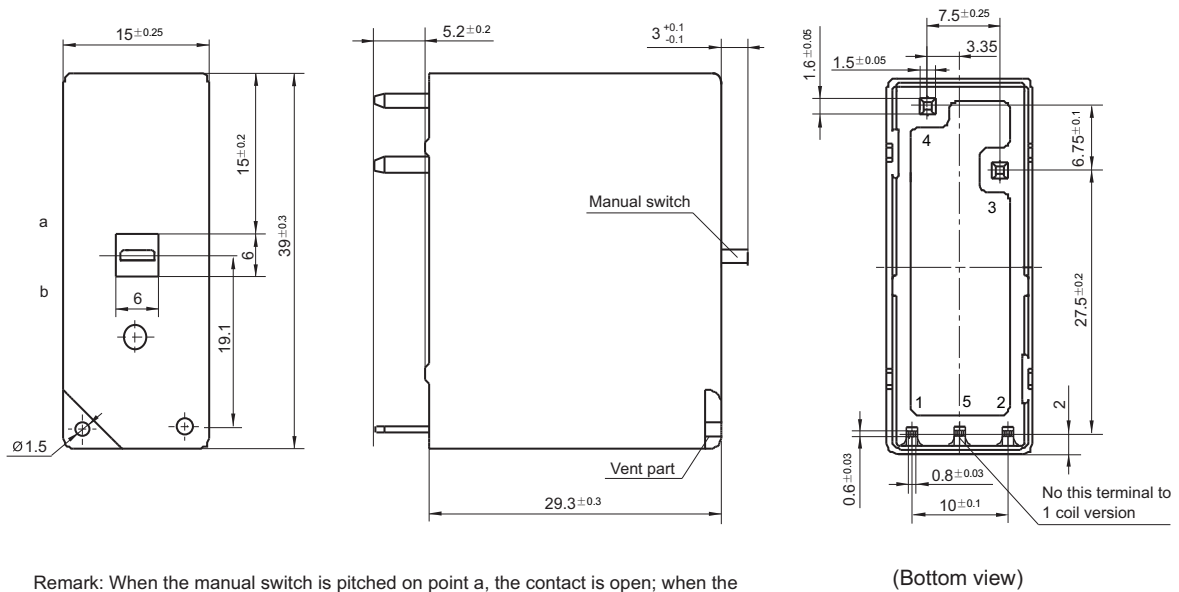
Outline Dimensions

HFE10-1/□□□H6

HFE10-2/□□□H6



HFE10-5/□□□H

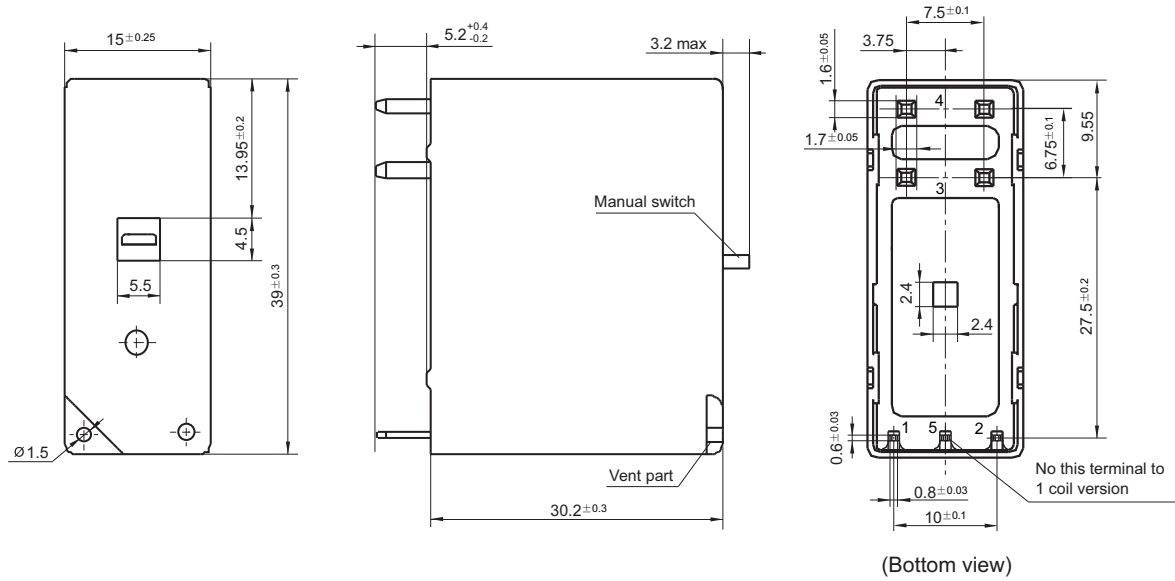


Remark: When the manual switch is pitched on point a, the contact is open; when the manual switch is pitched on point b, the contact is closed.

Outline Dimensions

HFE10-1/ □□□H7

HFE10-2/ □□□H7

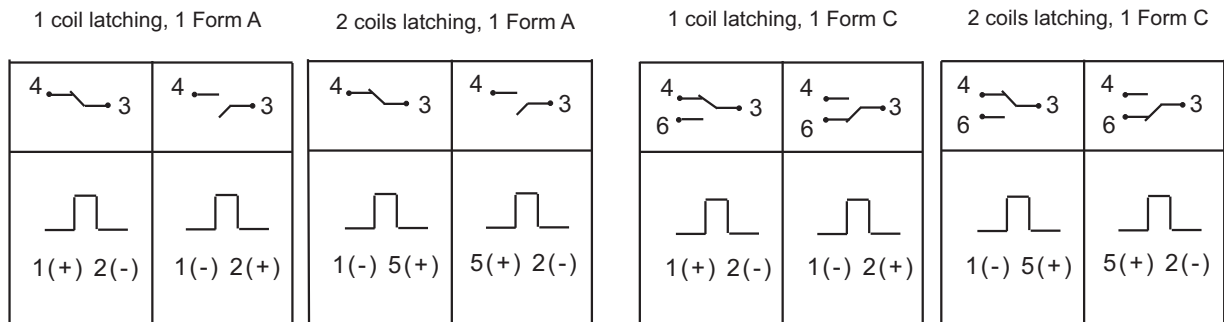


Remark: In case of no tolerance shown in outline dimension: outline dimension ≤ 1 mm, tolerance should be ± 0.2 mm; outline dimension > 1 mm and ≤ 5 mm, tolerance should be ± 0.3 mm; outline dimension > 5 mm, tolerance should be ± 0.4 mm.

Wiring Diagram

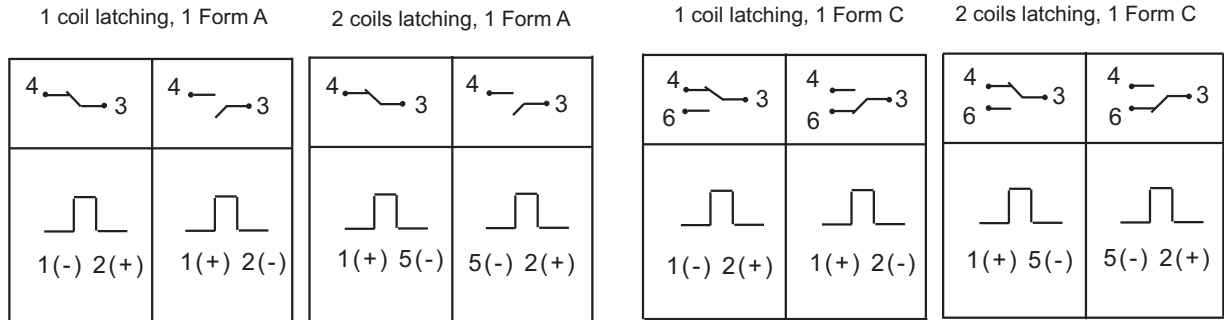
HFE10-1, HFE10-2, HFE10-3, HFE10-4

Positive polarity



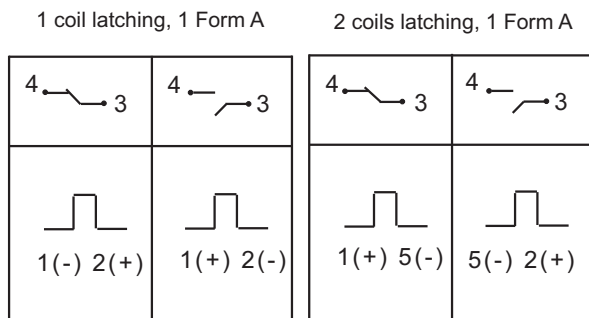
Wiring Diagram

Reverse polarity

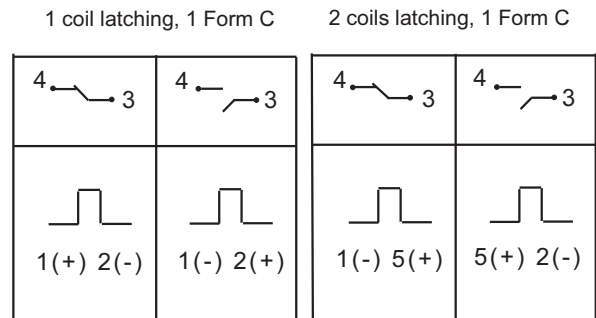


HFE10-5

Positive polarity



Reverse polarity



Notice

1. Relay is on the "reset" or "set" status when being released from stock, 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 to 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. In order to avoid changing operate voltage, products should not be kept in strong magnetic field during transportation, storage and application.

Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.