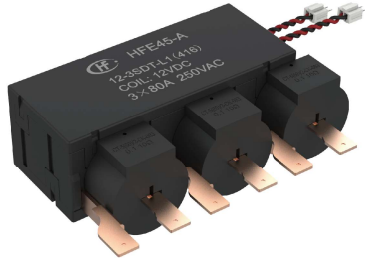


HFE45(661)

MINIATURE 3-PHASES RELAY



Features

- 80A 3-phases latching relay
- Electrical endurance 10000ops
- IEC62055-31:UC2 compliant.
- Contact resistance $\leq 0.45m\Omega$

RoHS compliant

CONTACT DATA

Contact arrangement	3A(Dual contact),3B(Dual contact)
Contact resistance ¹⁾	Typical value: ²⁾ $\leq 0.45m\Omega(80A)$
Contact material	AgSnO ₂
Contact rating	See "electrical endurance"
Max. switching voltage	276VAC
Max. switching current	80A
Max. switching power	22080VA
Mechanical endurance	1x10 ⁵ ops

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	1000M Ω (at 500VDC)	
Dielectric strength	Between coil and contact	4000VAC 1 min
	Between open contacts	2000VAC 1 min
Creepage distance	8mm	
Set time (at nomi. volt.)	30ms max.	
Reset time (at nomi. volt.)	30ms max.	
Shock resistance	Functional	98m/s ²
	Destructive	980m/s ²
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 85°C	
Termination	Coil termination	PCB&QC
	Load termination	QC
Unit weight	Approx.210g	
Construction	Dust protected	

Notes: The data shown above are initial values.

COIL

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

at 23°C

Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC ¹⁾²⁾ max.	Pulse Duration (Recommended) ms.	Coil Resistance x (1 \pm 10%) Ω
6	≤ 4.8	100~200	12
9	≤ 7.2	100~200	27
12	≤ 9.6	100~200	48
24	≤ 19.2	100~200	192
48	≤ 38.4	100~200	768

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC ¹⁾²⁾ max.	Pulse Duration (Recommended) ms.	Coil Resistance x (1 \pm 10%) Ω
6	≤ 4.8	100~200	6+6
9	≤ 7.2	100~200	13.5+13.5
12	≤ 9.6	100~200	24+24
24	≤ 19.2	100~200	96+96
48	≤ 38.4	100~200	384+384

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

2) The above values are used as incoming inspection standards, and the recommended driving voltage is 1~1.5 times of the rated voltage.

ELECTRICAL ENDURANCE

UC Class	Voltage (Uc)	Current (Ic)	Power Factor	Close Open time (s)	Electrical endurance (ops)	
416 (UC2)	253VAC	60A	COS ϕ =1	10:20	5000	Total:10000
			COS ϕ =0.5		5000	

Notes: Electrical endurance meet IEC62055-31 test requirement,do the inductive load test after the resistive load test.



HONGFA RELAY

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

2025 Rev.1.00

ORDERING INFORMATION

Type	HFE45 / 12 - 3SD A -T -1 -R (661)						
Coil voltage	6,9,12,24,48VDC						
Contact ¹⁾ arrangement	3SD: 3 Form B (Dual contact) 3SH: 3 Form A (Dual contact)						
Auxiliary contact	Nil: No auxiliary contact A: The auxiliary contact state is consistent with main contact B: The auxiliary contact state is the opposite to the main contact state						
Contact material	T: AgSnO ₂						
Coil type	1: Single coil latching			2: Double coils latching			
Polarity	R: Reverse polarity			Nil: Standard polarity			
Special code ²⁾³⁾	XXX: Customer special requirement						

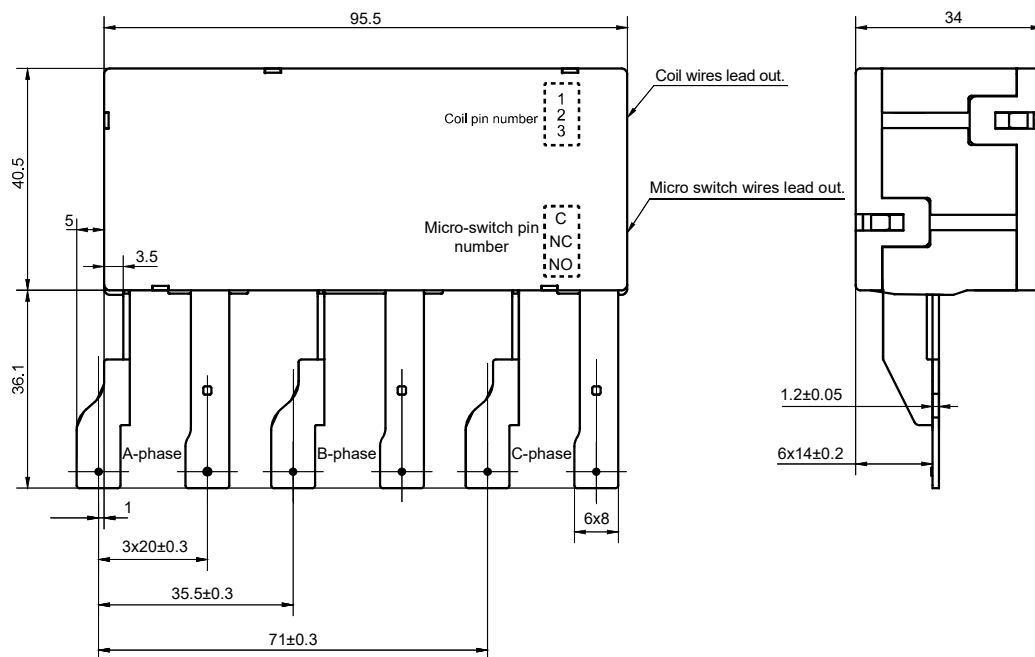
- Notes:** 1) 3SH means that relay is on the "reset" status when delivery; 3SD means that relay is on the "set" status when delivery. If no special required by customer, we will keep the relay on the "set" status when delivery.
 2) IEC62055-31 UC2 compliant. Making:2.5kA/10ms, 3 times,without welding; Carrying:4.5kA/10ms,3 times,without explosion; Carrying:2.5kA/10ms,3 times,without welding.
 3) The customer special requirement express as special code after evaluating by Hongfa.e.g.(416) stands for UC2.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Outline Dimensions

HFE45-3SH/3SD (Double-contact)



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

Standard polarity

Main contact		
The auxiliary contact state is consistent with main contact		
The auxiliary contact state is the opposite to the main contact state		
Single coil latching	1(+)-□-3(-)	1(-)-□-3(+)
Double coils latching	1(+)-□-2(-) Set (Main contact close)	2(-)-□-3(+) Reset (Main contact open)

Reverse polarity

Main contact		
The auxiliary contact state is consistent with main contact		
The auxiliary contact state is the opposite to the main contact state		
Single coil latching	1(-)-□-3(+)	1(+)-□-3(-)
Double coils latching	1(-)-□-2(+) Set (Main contact close)	2(+)-□-3(-) Reset (Main contact open)

CAUTIONS

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. Do not energize voltage to "set" coil and "reset" coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. Normally the load terminals are not suitable for reflow solder, wave solder or tin solder, we suggest use spot welding. Load terminals shall be prevented from assembly stress, or freely move.
4. Relays used for metering measuring applications are usually made with dust proof structure, while most relays could be made specially per customer's specific requirements. No longer than 6 months' storage time is recommended for this kind of relay, and please pay attention to the storage environment. To ensure contact reliability, we will keep contact status be closed when delivery if no special required by customer.

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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