

# HFE23

# MINIATURE 3-PHASES RELAY



### Features

- 3-phases latching relay
- 120A switching capability at Res.load
- According to the fault current and electrical life test of IEC 62055-31: UC1, UC2, UC3 (please see below table and notes2)
- Heavy load up to 27.6kVA
- 4kV dielectric strength (between coil and contacts)
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (115.0 x 54.0 x 24.0) mm

### CONTACT DATA

Contact arrangement	3A, 3B, 3SH, 3SD
Contact resistance	3A, 3B: 1mΩ max. (at 1A 24VDC) 3SH, 3SD: 0.9mΩ max. (at 1A 24VDC)
Contact material	AgSnO <sub>2</sub>
Contact rating (Res. load)	120A 230VAC
Max. switching voltage	440VAC
Max. switching current	120A
Max. switching power	27600VA
Mechanical endurance	1 x 10 <sup>5</sup> OPS

### CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1 min
	Between open contacts	2500VAC 1 min
Creepage distance	8mm	
Operate time (at nomi. volt.)	20ms max.	
Release time (at nomi. volt.)	20ms max.	
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 85°C	
Termination	QC	
Unit weight	Approx.300g	
Construction	Dust protected	

Notes: The data shown above are initial values.

### COIL

Coil power	1 coil latching: Approx. 5W 2 coils latching: Approx. 10W
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### COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω	
6	4.8	100	1 coil latching	7
9	7.2	100		16
12	9.6	100		29
24	19.2	100		115
48	38.4	100		460
6	4.8	100	2 coils latching	3.5+3.5
9	7.2	100		8+8
12	9.6	100		14.5+14.5
24	19.2	100		57.5+57.5
48	38.4	100		230+230

Notes: When requiring other nominal voltage, special order allowed.

### ELECTRICAL ENDURANCE

UC Class	Voltage (Uc)	Current (Ic)	Power Factor	Close Open time (s)	Electrical endurance (OPS)
415 (UC1)	220VAC	80A	COSØ=1	10:20	3000
		10A	COSØ=0.4		3000
80A		COSØ=1	5000		
		COSØ=0.5	5000		
416 (UC2)	220VAC	80A	COSØ=1	10:20	5000
COSØ=0.5			5000		
417 (UC3)		100A	COSØ=1		5000
			COSØ=0.5		5000

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

Only some typical ratings of UC are listed above, if more special ratings required, please contact us.



HONGFA RELAY

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

2012 Rev. 1.00

## ORDERING INFORMATION

Type	HFE23 -A / 12 -3D T 2 -R (XXX)	
Version	A: Type A contact terminal	
Coil voltage	6, 9, 12, 24, 48VDC	
Contact form <sup>1)</sup>	<b>3D: 3 Form B (Single-contact)</b> <b>3H: 3 Form A (Single-contact)</b> <b>3SD: 3 Form B (Double-contact)</b> <b>3SH: 3 Form A (Double-contact)</b>	
Contact material	T: AgSnO <sub>2</sub>	
Sort	1: 1 coil latching	2: 2 coils latching
Polarity	R: Negative polarity	Nil: Positive polarity
Customer special code	(415): UC1 (416): UC2 (417): UC3	

Notes: 1) 3H, 3SH means that relay is on the "reset" status when delivery; 3D, 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) Please make clear your technical requirements, and choose from the following 3 UC ratings:

UC1: meet the UC1 requirements on IEC62055-31: Carrying test 3000A peak current for 10ms;

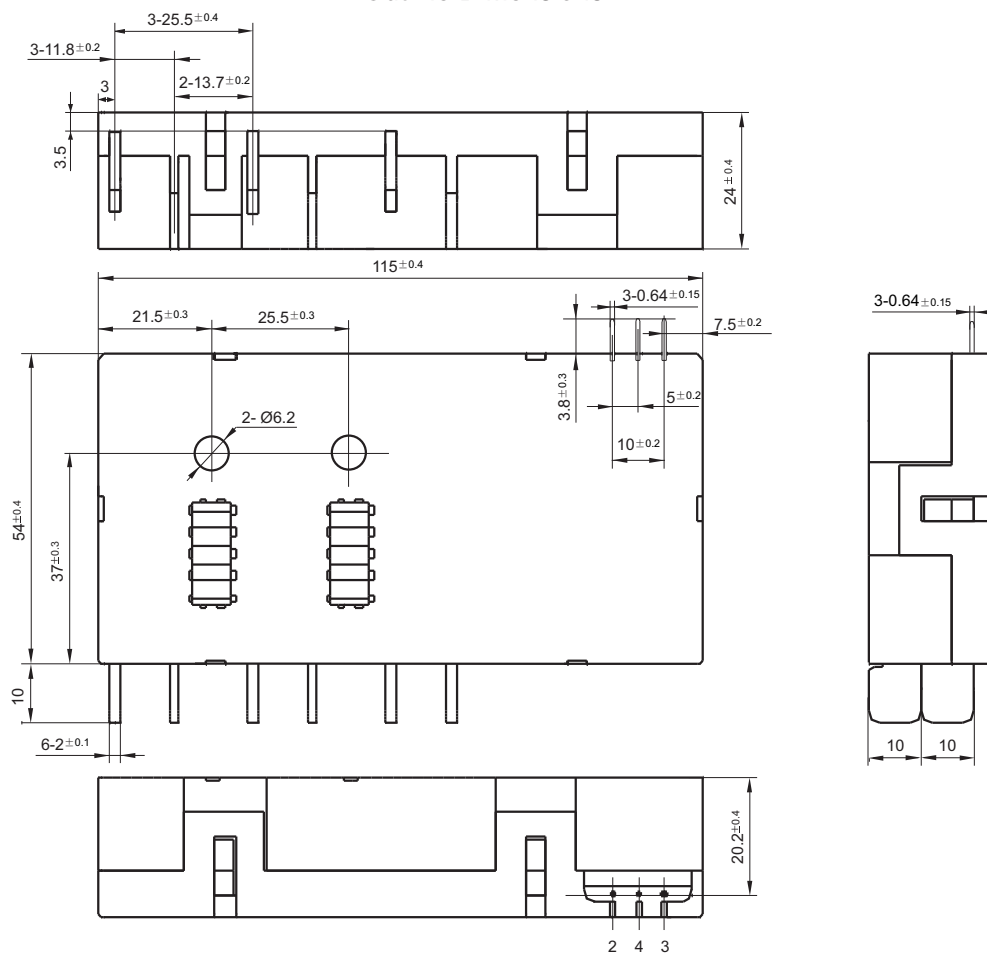
UC2: meet the UC2 requirements on IEC62055-31: Making test: 2.5KA/10ms, carrying test 4.5KA/10ms;

UC3: meet the UC3 requirements on IEC62055-31: Making test: 3KA/10ms, carrying test 6KA/10ms.

## OUTLINE DIMENSIONS, WIRING DIAGRAM

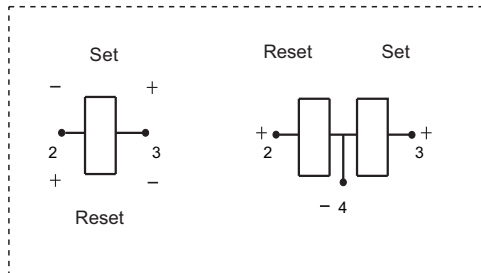
Unit: mm

### Outline Dimensions

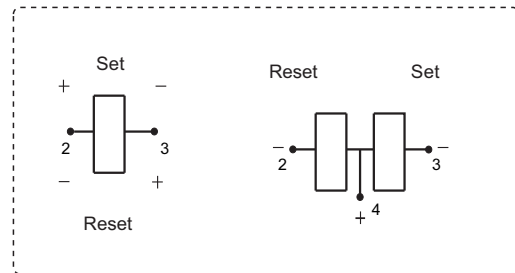


Coil Wiring Diagram

Positive polarity



Negative 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. The terminals of relay without twisted copper wire can not be tin-soldered, can not be moved willfully, more over two terminals can not be fixed at the same time.
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**

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.

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