

# HFE28

# HIGH POWER LATCHING RELAY



## Features

- Latching relay
- 100A 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)
- AC-voltage driving is feasible
- 4kV dielectric strength (between coil and contacts)
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (66.0 x 75.0 x 23.5) mm

## CONTACT DATA

Contact arrangement	2A, 2B, 2SH, 2SD
Contact resistance	2A, 2B: 0.5mΩ max.(at 100A) 2SH, 2SD: 0.35mΩ max.(at 100A)
Contact material	AgSnO <sub>2</sub>
Contact rating (Res. load)	100A 277VAC/28VDC
Max. switching voltage	440VAC
Max. switching current	120A
Max. switching power	27700VA/2800W
Mechanical endurance	1 x 10 <sup>5</sup> OPS

## CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	2500VAC 1min
Creepage distance	9.6mm	
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. 250g	
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	Set / Reset Voltage VDC max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω	
6	4.8	100	1 coil latching	7.2
12	9.6	100		28.8
24	19.2	100		114
48	36.4	100		460
6	4.8	100	2 coils latching	3.6+3.6
12	9.6	100		14.4+14.4
24	19.2	100		57+57
48	36.4	100		230+230

Nominal Voltage VAC	Set / Reset Voltage VAC max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω	
230	161	50: full-wave rectification	Single coil latching	2420
230	161	100: half-wave rectification	Double coils latching	1210+1210

## ELECTRICAL ENDURANCE

UC Class	Voltage (Uc)	Current (Ic)	Power Factor	Close Open time (s)	Electrical endurance (OPS)	
415 (UC1)	230VAC	80A	COSØ=1	10:20	3000	Total:6000
		10A	COSØ=0.4		3000	
416 (UC2)		80A	COSØ=1		5000	Total:10000
			COSØ=0.5		5000	
417 (UC3)	100A		COSØ=1	5000	Total:10000	
			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	HFE28 -A 140 /12 -2D T 2 -R (XXX)							
Version	A: Type A contact terminal							
Sampling resistance	140: 140 $\mu\Omega$ 280: 280 $\mu\Omega$ Nil: Without sampling resistance							
Coil voltage	6, 12, 24, 48VDC; 230VAC							
Contact form <sup>1)</sup>	2D: 2 Form B (Single-contact) 2H: 2 Form A (Single-contact) 2SD: 2 Form B (Double-contact of 2 Form B) 2SH: 2 Form A (Double-contact of 2 Form A)							
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 <sup>2)</sup>	(415): UC1 (416): UC2 (417): UC3							

**Notes:** 1) 2H, 2SH means that relay is on the "reset" status when delivery; 2D, 2SD 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 2400A peak current for 10ms;

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

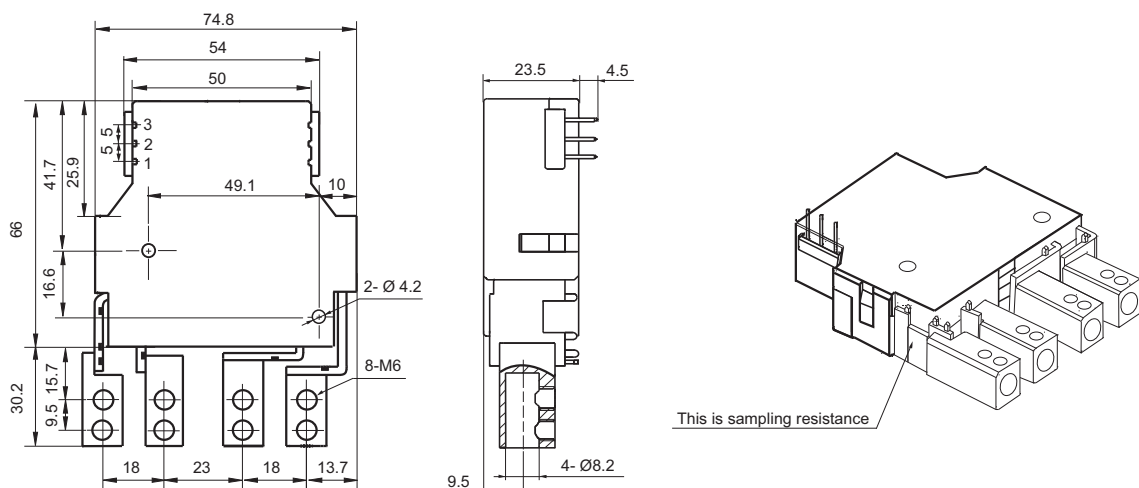
UC3: meet the UC3 requirements on IEC62055-31: Making test: 3kA/10ms, carrying test 6kA/10ms.

## OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

## Outline Dimensions

## Type A contact terminal

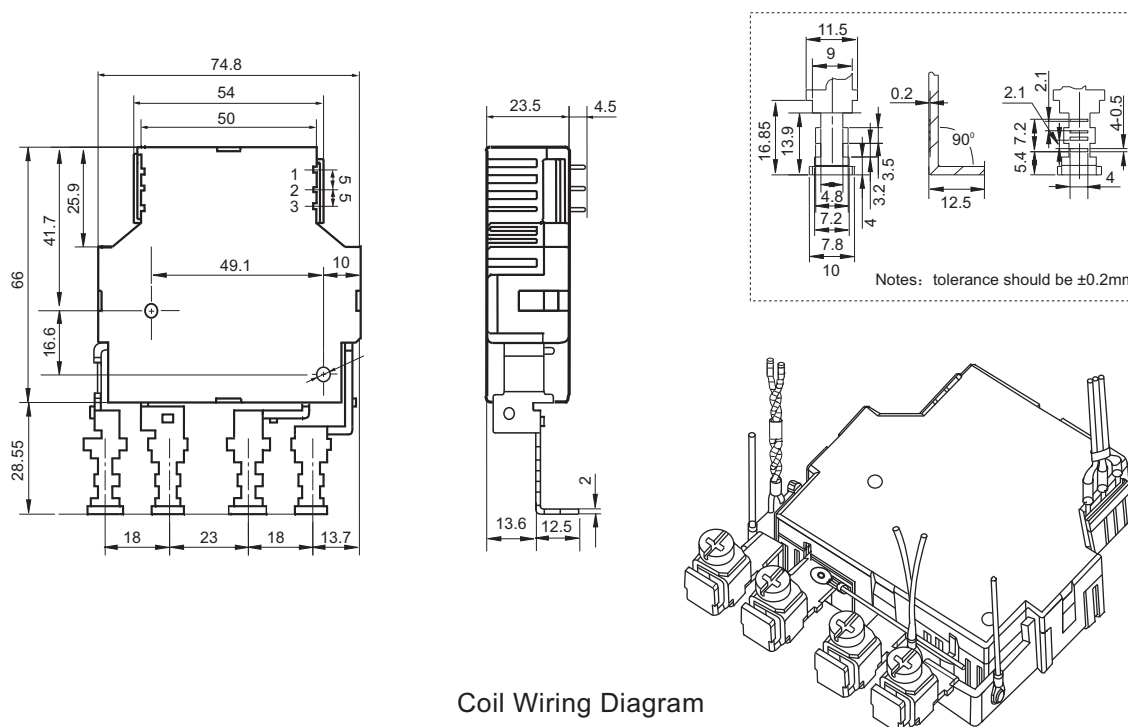


Remark: In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm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

## OUTLINE DIMENSIONS AND WIRING DIAGRAM

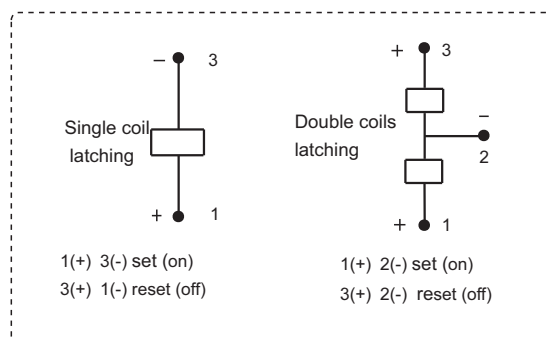
Unit: mm

### Typical Design

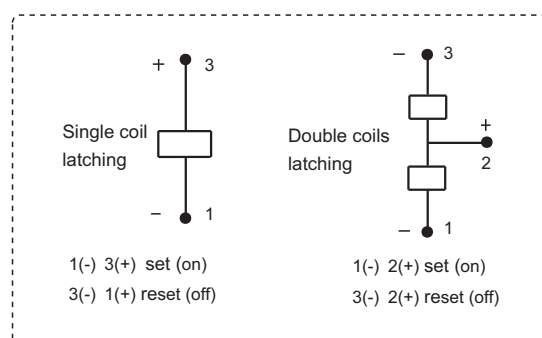


### Coil Wiring Diagram

#### Positive polarity



#### Negative polarity



### Notice

- Relay is on the "reset" or "set" status when being released from stock, with the consideration of shock arisen 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 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.
- The terminals of relay without twisted copper wire can not be tin-soldered, can not be moved willfully.
- 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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