

# HFE8

# SUBMINIATURE INTERMEDIATE POWER RELAY



File No.: E134517



File No.: 40019452



File No.: CQC06017016720



## Features

- Latching types available
- High sensitive
- High switching capacity  
1A,1B: 8A 250VAC; 2A, 2B,1A + 1B: 5A 250VAC
- 1 Form A,1 Form B, 2 Form A,2 Form B and  
1A + 1B contact arrangement
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (20.2 x 11.0 x 10.4) mm

## CONTACT DATA

Contact arrangement	1A,1B	2A,2B, 1A + 1B
Contact resistance	No gold plated: 50mΩ (at 1A 6VDC) Gold plated: 30mΩ (at 1A 6VDC)	
Contact material	AgNi	
Contact rating (Res. load)	8A 250VAC 5A 30VDC	5A 250VAC 5A 30VDC
Max. switching voltage	380VAC / 125VDC	
Max. switching current	8A	5A
Max. switching power	2000VA/150W	1250VA/150W
Mechanical endurance	1 x 10 <sup>7</sup> OPS	
Electrical endurance	1 x 10 <sup>5</sup> OPS	

## CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	3000VAC 1min
	Between open contacts	1000VAC 1min
	Between contact sets	2000VAC 1min
Operate time (at nomi. volt.)	10ms max. (Approx. 5ms)	
Release time (at nomi. volt.)	5ms max. (Approx. 3ms)	
Set time (latching)	10ms max. (Approx. 5ms)	
Reset time (latching)	10ms max. (Approx. 4ms)	
Shock resistance	Functional	196m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz to 55Hz 2.0mm DA	
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 70°C	
Termination	PCB	
Unit weight	Approx. 4.7g	
Construction	Wash tight, Flux proofed	

Notes: The data shown above are initial values.

## COIL

Coil power	Single side stable	300mW
	1 coil latching	150mW
	2 coils latching	300mW

## COIL DATA

at 23°C

### Single side stable (300mW)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil Resistance Ω
3	2.4	0.3	30 x (1±10%)
5	4.0	0.5	83 x (1±10%)
6	4.8	0.6	120 x (1±10%)
9	7.2	0.9	270 x (1±10%)
12	9.6	1.2	480 x (1±10%)
24	19.2	2.4	1920 x (1±10%)

## SAFETY APPROVAL RATINGS

UL&CUL	1 Form A	8A 250VAC 5A 30VDC 1/6HP 250VAC
	2 Form A	5A 250VAC 5A 30VDC 1/10HP 250VAC
	1A + 1B	5A 250VAC 5A 30VDC 1/6HP 250VAC
VDE	1 Form A	8A 250VAC 5A 30VDC 5A 250VAC COSØ = 0.4
	2 Form A 1A + 1B	5A 250VAC 5A 30VDC 3A 250VAC COSØ = 0.4

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



HONGFA RELAY

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

## COIL DATA

at 23°C

### 1 coil latching (150mW)

Nominal Voltage VDC	Set / Reset Voltage VDC	Coil Resistance Ω
3	2.4	60 x (1±10%)
5	4.0	167 x (1±10%)
6	4.8	240 x (1±10%)
9	7.2	540 x (1±10%)
12	9.6	960 x (1±10%)
24	19.2	3840 x (1±10%)

### 2 coils latching (300mW)

Nominal Voltage VDC	Set / Reset Voltage VDC	Coil Resistance Ω
3	2.4	(30+30) x (1±10%)
5	4.0	(83+83) x (1±10%)
6	4.8	(120+120) x (1±10%)
9	7.2	(270+270) x (1±10%)
12	9.6	(480+480) x (1±10%)
24	19.2	(1920+1920) x (1±10%)

## ORDERING INFORMATION

Type	HFE8 / 12 -1H S G -L2 -R (XXX)						
Coil voltage	3, 5, 6, 9, 12, 24VDC						
Contact form <sup>1)</sup>	1H: 1 Form A 1D: 1 Form B 2H: 2 Form A 2D: 2 Form B 1HD: 1A+1B						
Construction <sup>2)</sup>	S: Wash tight Nil: Flux proofed						
Contact plating	G: Gold plated Nil: No gold plated						
Sort	L1: 1 coil latching L2: 2 coils latching Nil: Single side stable						
Polarity	R: Reverse polarity Nil: Standard polarity						
Customer special code							

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

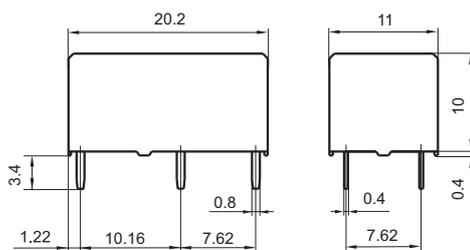
2) Under the ambience with dangerous gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, wash tight type is recommended; Please test the relay in real applications.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

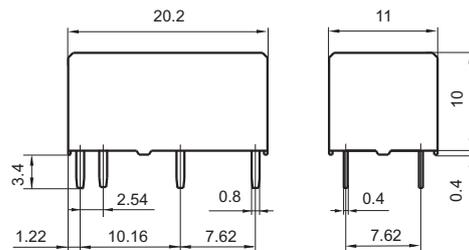
Unit: mm

### Outline Dimensions

Single side stable & 1 coil latching



2 coils latching

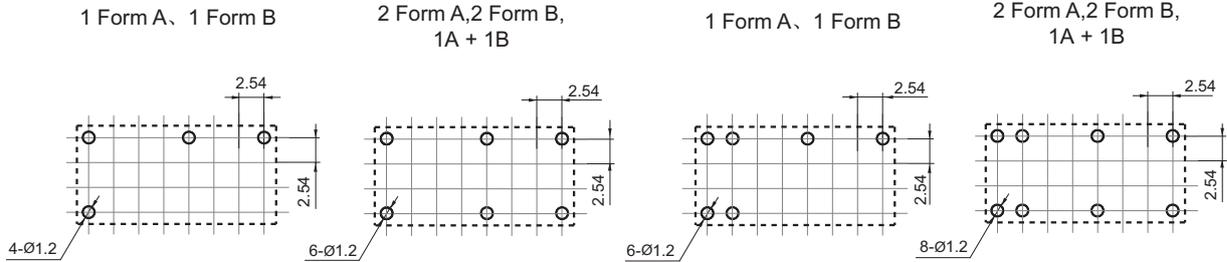


**PCB Layout**

(Bottom view)

**Single side stable & 1 coil latching**

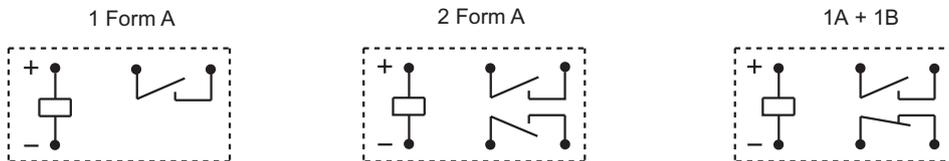
**2 coils latching**



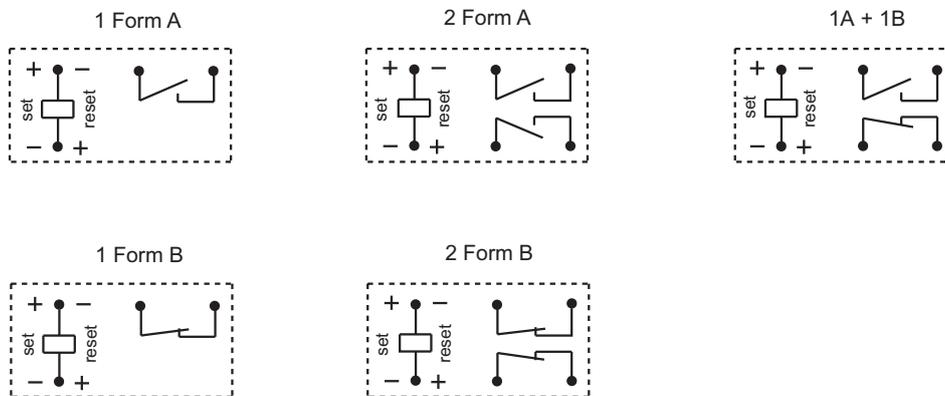
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should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

**Wiring Diagram (Bottom view)**

**Single side stable (Standard polarity)**

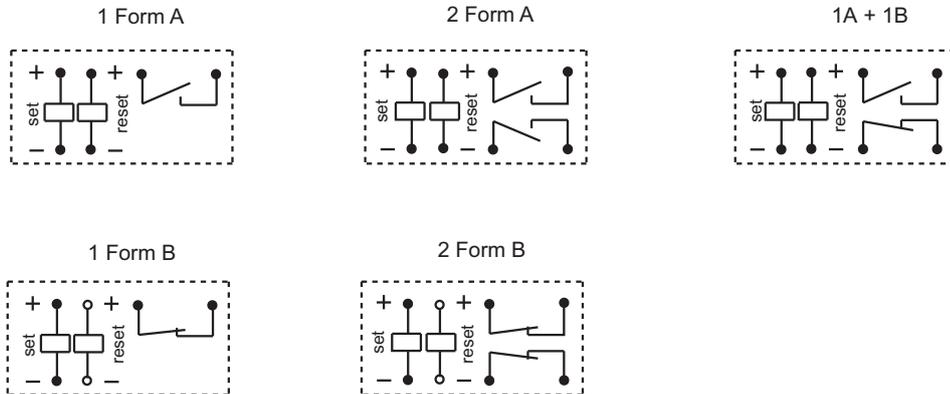


**1 coil latching (Standard polarity)**



Wiring Diagram (Bottom view)

2 coils latching (Standard polarity)



Remark: The coil polarity of Reverse polarity and Standard polarity is opposite.

**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.