

# HF32FV-G/HF32FV-T SUBMINIATURE INTERMEDIATE POWER RELAY



File No.:E134517



File No.:40012204



File No.:CQC14002120720



## Features

- 10A switching capability
- Dielectric strength 4kV (between coil and contacts)
- TV-5 products are available
- Relow soldering version available
- Halogen-free products are available
- Product in accordance to IEC60335-1 available
- Meet reinforce insulation
- UL insulation system: Class F

RoHS compliant

## CONTACT DATA

Contact arrangement	1A	
Contact resistance <sup>1)</sup>	100mΩ max.(at 1A 6VDC)	
Contact material	AgNi <sup>2)</sup> ,AgSnO <sub>2</sub> , AgCdO <sup>2)</sup>	
Contact rating (Res. load)	Standard	Sensitive <sup>3)</sup>
	10A 250VAC	
Max. switching voltage	277VAC	
Max. switching current	10A	
Max. switching power	2770VA	
Mechanical endurance	1 x 10 <sup>7</sup> OPS	
Electrical endurance	Standard	1 x 10 <sup>5</sup> OPS (10A 250VAC Resistive load, at room temp., 1s on 9s off)
		5 x 10 <sup>4</sup> OPS (10A 250VAC Resistive load, at 85°C, 1s on 9s off)
	Sensitive <sup>3)</sup>	1 x 10 <sup>5</sup> OPS (8A 250VAC Resistive load, at room temp., 1s on 9s off) no suffix 590
		5 x 10 <sup>4</sup> OPS (8A 250VAC Resistive load, at 85°C, 1s on 9s off) suffix 590

**Notes:**1) The data shown above are initial values.  
2) Only applicable to HF32FV-G no suffix 590.  
3) Only applicable to HF32FV-G.

## CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1000VAC 1min
Surge withstand voltage	6kV(1.2 / 50μs)	
Operate time (at rated. volt.)	8ms max.	
Release time (at rated. volt.)	5ms max.	
Shock *2)	Functional	294m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance *2)	Functional	10Hz to 55Hz 1.5mm DA
Humidity	5% to 85% RH	
Ambient operating temperature	-40°C to 105°C	
Termination	PCB	
Unit weight	Approx. 6g	
Construction	Plastic sealed, Flux proofed	

**Notes:** 1) The data shown above are initial values;  
2) HF32FV-T only provides Flux proofed;  
3) For working environment temperature > 85°C, please contact with Hongfa.



HONGFA RELAY

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

2020 Rev. 1.01

## COIL

Coil power	Standard: Approx. 450mW; Sensitive: Approx. 200mW
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## COIL DATA

at 23°C

### Standard Type

Nominal Voltage VDC	Pick-up Voltage VDC max. 1)	Drop-out Voltage VDC min. 1)	Max. Voltage VDC*2)	Coil Resistance Ω
3	2.25	0.15	3.9	20 x (1±10%)
5	3.75	0.25	6.5	55 x (1±10%)
6	4.50	0.30	7.8	80 x (1±10%)
9	6.75	0.45	11.7	180 x (1±10%)
12	9.00	0.60	15.6	320 x (1±10%)
18	13.5	0.90	23.4	720 x (1±10%)
24	18.0	1.20	31.2	1280 x (1±10%)
48	36.0	2.40	62.4	5120 x (1±10%)

### Sensitive Type

Nominal Voltage VDC	Pick-up Voltage VDC max. 1)	Drop-out Voltage VDC min. 1)	Max. Voltage VDC*2)	Coil Resistance Ω
3	2.25	0.15	4.5	45 x (1±10%)
5	3.75	0.25	7.5	125 x (1±10%)
6	4.50	0.30	9.0	180 x (1±10%)
9	6.75	0.45	13.5	400 x (1±10%)
12	9.00	0.60	18.0	720 x (1±10%)
18	13.5	0.90	27.0	1600 x (1±10%)
24	18.0	1.20	36.0	2800 x (1±10%)
48	36.0	2.40	72.0	11520 x (1±10%)

**Notes:** 1) The data shown above are initial values.  
2)\* Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

## SAFETY APPROVAL RATINGS

UL/CUL	HF32FV-G	AgSnO <sub>2</sub>	10A 277VAC /250VAC General use 85°C 10A 277VAC/250VAC Resistive Load 40°C 10A 277VAC/250VAC Resistive Load 105°C 10A 277VAC/250VAC Resistive Load(Sensitive) 40°C 10A 277VAC/250VAC Resistive Load(Sensitive) 85°C 8A 277VAC/250VAC General use(Sensitive) 85°C TV-5 120VAC (suffix 590) 40°C 3A 120VAC electronic ballast (Sensitive suffix 590) 85°C
		AgCdO	10A 277VAC/250VAC General use 85°C 10A 277VAC/250VAC Resistive Load 105°C 10A 30VDC Resistive Load 85°C 10A 277VAC/250VAC Resistive Load 40°C 8A 277VAC/250VAC General use(Sensitive) 85°C
		AgNi	10A 277VAC/250VAC Resistive Load 40°C 8A 277VAC/250VAC Resistive Load(Sensitive) 40°C
	HF32FV-T	AgSnO <sub>2</sub>	10A 277VAC/250VAC General use 105°C 10A 277VAC/250VAC Resistive Load 105°C 1/3HP 250VAC Motor Load 105°C
VDE	HF32FV-G	AgSnO <sub>2</sub>	10A 277VAC/250VAC Resistive Load 85°C 10A 277VAC/250VAC Resistive Load(Sensitive) 85°C 8A 277VAC/250VAC Resistive Load(Sensitive) 85°C
		AgCdO	10A 277VAC/250VAC Resistive Load 85°C
	AgNi	10A 277VAC/250VAC Resistive Load 85°C 8A 277VAC/250VAC Resistive Load(Sensitive) 85°C	
HF32FV-T	AgSnO <sub>2</sub>	10A 277VAC/250VAC Resistive Load 105°C 5A 250VAC COS φ 0.6 105°C	
CQC	HF32FV-G	AgSnO <sub>2</sub>	10A 277VAC/250VAC Resistive Load 85°C 8A 277VAC/250VAC Resistive Load(Sensitive) 85°C 10A 277VAC/250VAC Resistive Load(Sensitive) 85°C 10A 277VAC/250VAC Resistive Load 105°C 10A 277VAC/250VAC Resistive Load(Sensitive) 105°C
		AgCdO	10A 277VAC/250VAC Resistive Load 85°C
		AgNi	10A 277VAC/250VAC Resistive Load 85°C 8A 277VAC/250VAC Resistive Load(Sensitive) 85°C
	HF32FV-T	AgSnO <sub>2</sub>	10A 277VAC/250VAC Resistive Load 105°C

**Notes:** 1) Opening the vent hole under contact material AgSnO<sub>2</sub> testing.  
2) Only typical loads are listed above. Other load specifications can be available upon request.

## ORDERING INFORMATION

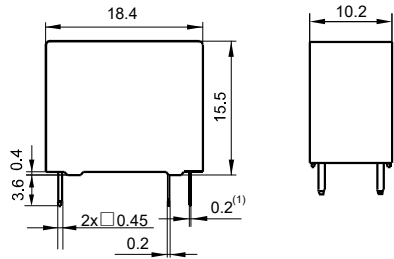
	HF32FV-G/	12	-H	S	L	T	F	(XXX)
<b>Type</b>	HF32FV-G HF32FV-T							
<b>Coil voltage</b>	3, 5, 6, 9, 12, 18, 24, 48VDC							
<b>Contact arrangement</b>	H: 1 Form A							
<b>Construction</b> <sup>1)2)</sup>	S: Plastic sealed <sup>3)</sup>		Nil: Flux proofed					
<b>Coil power</b>	L: Sensitive <sup>3)</sup>		Nil: Standard					
<b>Contact material</b>	T: AgSnO <sub>2</sub>	3: AgNi <sup>4)</sup>	Nil: AgCdO <sup>4)</sup>					
<b>Insulation standard</b>	F: Class F							
<b>Special code</b> <sup>5)</sup>	XXX: Customer special requirement		Nil: Standard					

**Notes:** 1) We recommend flux proofed types for a clean environment (free from contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.).  
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.  
3) Only applicable to HF32FV-G.  
4) Only applicable to HF32FV-G with no suffix 590.  
5) The customer special requirement express as special code after evaluating by Hongfa. e.g. (335) stands for product in accordance to IEC 60335-1 (GWT); suffix 590 for product in accordance to TV loading. For standard type is TV-5, for sensitive type is TV-3.  
6) Two packing methods available: paper box package, tube package. Standard tube packing length is 553mm. Any special requirement needed, please contact us for more details.  
7) For products that should meet the explosion-proof requirements of "IEC 60079 series", please note [Ex] after the specification while placing orders. Not all products have explosion-proof certification, so please contact us if necessary, in order to select the suitable products.

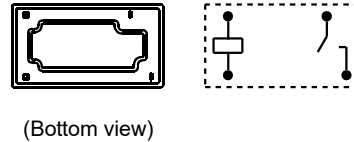
# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

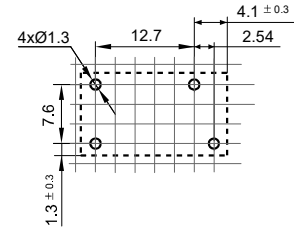
Outline Dimensions



Wiring Diagram  
(Bottom view)



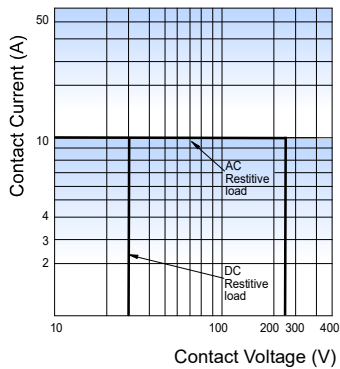
PCB Layout  
(Bottom view)



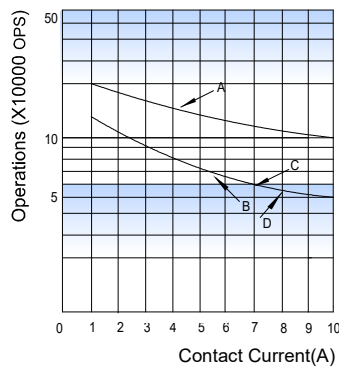
- Remark: 1) the pin size of HF32FV-G sensitive with suffix 590 is 0.4mm.  
 2) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.  
 3) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.  
 4) The tolerance without indicating for PCB layout is always  $\pm 0.1$ mm.  
 5) The width of the gridding is 2.54mm.

## CHARACTERISTIC CURVES

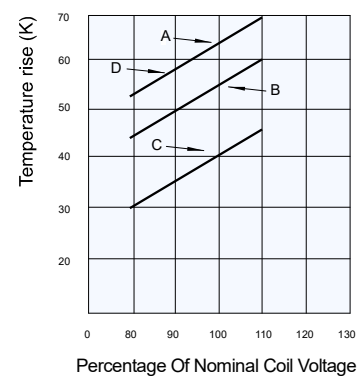
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



**Remark:**

- Curve A: HF32FV-G standard  
 Curve B: HF32FV-G sensitive(no suffix 590)  
 Curve C: HF32FV-T sensitive(suffix 590)  
 Curve D: HF32FV-T standard
- Testing conditions:  
 HF32FV-G Standard: flux proofed, resistive load, 10A/250VAC, at room temp. 1s on 9s off.  
 HF32FV-G Sensitive(no suffix 590): flux proofed, resistive load, 10A/250VAC, at room temp. 1s on 9s off.  
 HF32FV-G Sensitive(suffix 590): resistive load, 10A/250VAC, at 85°C. 1s on 9s off.  
 HF32FV-T Standard: flux proofed, resistive load, 10A/250VAC, 105°C. 1s on 9s off.

**Testing conditions:**

10A at 85°C.  
 Mounting distance: 10mm

**Disclaimer**

The specification is for reference only. See to "Terminology and Guidelines" for more information. 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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