

HF32FV

SUBMINIATURE INTERMEDIATE POWER RELAY



File No.:E134517



File No.:40012204



File No.:CQC14002120720



Features

- 5A switching capability
- Dielectric strength 4kV (between coil and contacts)
- 1 Form A configurations
- Standard PCB layout
- Plastic sealed and flux proofed types available
- UL insulation system: Class F
- Product in accordance to IEC 60335-1 available
- Meet reinforce insulation
- Relow soldering version available
- Halogen-free products are available

CONTACT DATA

Contact arrangement	1A	
Contact resistance 1)	100mΩ max.(at 1A 6VDC)	
Contact material	AgSnO ₂ , AgCdO, AgNi	
Contact rating (Res. load)	Standard	Sensitive
	5A 250VAC 5A 30VDC	3A 250VAC 3A 30VDC
Max. switching voltager	277VAC / 30VDC	
Max. switching current	5A	3A
Max. switching power	1385VA / 150W	831VA / 90W
Mechanical endurance	1 x 10 ⁷ OPS	
Electrical endurance	Standard	1 x 10 ⁵ OPS (5A 250VAC Resistive load, at room temp., 1s on 9s off) 5 x 10 ⁴ OPS (5A 250VAC Resistive load, at 85°C, 1s on 9s off)
	Sensitive	1 x 10 ⁵ OPS (3A 250VAC Resistive load, at room temp., 1s on 9s off) 5 x 10 ⁴ OPS (3A 250VAC Resistive load, at 85°C, 1s on 9s off)

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

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 * resistance	Functional	294m/s ²
	Destructive	980m/s ²
Vibration resistance *	Functional	10Hz to 55Hz 1.5mm DA
Humidity	5% to 85% RH	
Ambient oprating 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) For working environment temperature > 85°C, please contact with Hongfa.

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.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2020 Rev. 1.01

SAFETY APPROVAL RATINGS

UL/CUL	AgSnO ₂	5A 277VAC /250VAC General Use at 40°C 5A 277VAC/250VAC General Use at 85°C 5A 30VDC General Use at 85°C 300W 120VAC Tunsten at 40°C 1/4HP 250VAC at 85°C 3A 277VAC/250VAC General Use (Sensitive) at 85°C 5A 277VAC/250VAC Resistive at 105°C 3A 30VDC General Use (Sensitive) at 85°C 3A 277VAC/250VAC General Use (Sensitive) at 105°C TV-3 120VAC at 40°C
	AgCdO	5A 277VAC/250VAC General Use at 85°C 5A 30VDC Resistive at 85°C
	AgNi	5A 277VAC/250VAC General Use at 85°C 5A 30VDC Resistive at 85°C 3A 30VDC Resistive (Sensitive) at 85°C 3A 277VAC/250VAC General Use (Sensitive) at 85°C 5A 277VAC/250VAC General Use at 105°C 3A 277VAC/250VAC General Use (Sensitive) at 105°C
VDE	AgSnO ₂	250VAC 4(2) Inductive load at 85°C 5A 30VDC Resistive at 85°C 5A 277VAC/250VAC Resistive at 85°C 3A 277VAC/250VAC Resistive at 85°C 3A 30VDC Resistive (Sensitive) at 85°C 5A 277VAC/250VAC Resistive at 105°C 3A 277VAC/250VAC Resistive(Sensitive) at 105°C
	AgCdO	5A 277VAC/250VAC Resistive at 85°C 5A 30VDC Resistive at 85°C
	AgNi	5A 277VAC/250VAC Resistive at 85°C 3A 277VAC/250VAC Resistive (Sensitive) at 85°C 5A 277VAC/250VAC Resistive at 105°C 3A 277VAC/250VAC Resistive (Sensitive) at 105°C
CQC	AgSnO ₂	5A 277VAC/250VAC Resistive at 85°C 5A 30VDC Resistive at 85°C 3A 277VAC/250VAC Resistive (Sensitive) at 85°C 5A 277VAC/250VAC Resistive at 105°C 3A 277VAC/250VAC Resistive (Sensitive) at 105°C
	AgCdO	5A 277VAC/250VAC Resistive at 85°C 5A 30VDC Resistive at 85°C
	AgNi	5A 277VAC/250VAC Resistive at 85°C 5A 30VDC Resistive at 85°C 3A 277VAC/250VAC Resistive (Sensitive) at 85°C

Notes: 1) All values unspecified are at room temperature.

2) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION

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

Notes:1) We recommend flux proofed types for a clean environment (free from contaminations like H₂S, SO₂, NO₂, 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) Sensitive loading: 3A.

4) 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); e.g.(590) stands for product in accordance to TV-3 loading,only for standard type.

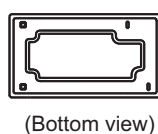
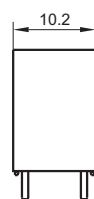
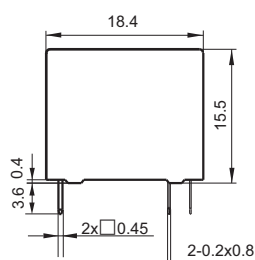
5) Two packing methods available: paper box package, tube package,Standard tube packing length is 553mm. Any special requirement needed, please contact us for more details.

6) 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

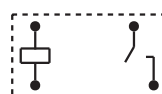
Unit: mm

Outline Dimensions



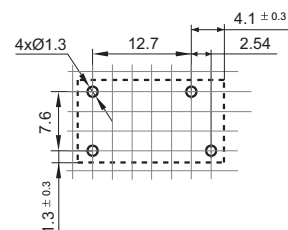
Wiring Diagram

(Bottom view)



PCB Layout

(Bottom view)



Remark: 1) *The additional tin top is max. 1mm.

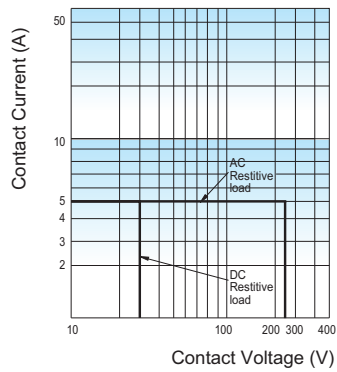
2) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

3) The tolerance without indicating for PCB layout is always ±0.1mm.

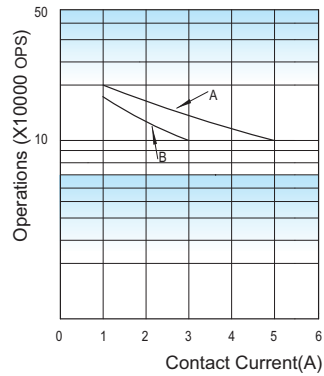
4) The width of the gridding is 2.54mm.

CHARACTERISTIC CURVES

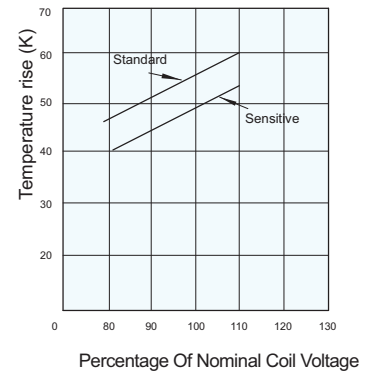
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



Remark:

1. Curve A: standard
Curve B: sensitive
2. Testing conditions:
Standard: flux proofed, resistive load, 5A 250VAC, at room temp. 1s on 9s off.
Sensitive: flux proofed, resistive load, 3A 250VAC, at room temp. 1s on 9s off.

Testing conditions:

Standard: 5A at 85°C.
Sensitive: 3A at 85°C
Mounting distance: 5mm

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.