

HF161F-40

MINIATURE HIGH POWER RELAY



File No.: E134517



File No.:R 50475730



File No.:CQC20002246447



Features

- Applicable to variable frequency air conditioning used for soft start
- 40 A 277 VAC loading current capability
- Class F insulation system

RoHS compliant

CONTACT DATA

Contact arrangement	1A
Contact resistance	10mΩ max.(6VDC 20A)
Contact material	AgSnO ₂
Contact rating (Res. load)	Making 20A Loading 40A Breaking 20A, 277VAC
Max. switching voltage	277VAC
Max. switching current	40A
Max. continuous current	40A at 85°C
Max. switching power	11080VA
Mechanical endurance	2×10 ⁶ OPS
Electrical endurance ⁽¹⁾	1×10 ⁵ OPS MIN (85°C, 1s on 9s off, Making 20A Loading 40A Breaking 20A, 277VAC, Resistive load) 1×10 ⁴ OPS MIN (85°C, 1s on 9s off, 30A24VDC, Resistive load)

Notes: 1) For plastic sealed type, the venting-hole should be opened in electrical endurance test.

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4500VAC 1min
	Between open contacts	1000VAC 1min
Surge voltage (between coil & contacts)	10kV (1.2 / 50μs)	
Operate time (at nomi. volt.)	20ms max.	
Release time (at nomi. volt.)	10ms max.	
Temperature rise (at nomi. volt.)	70K max (Contact load current 40A, rated voltage excitation, at 85°C)	
Shock resistance	Functional	196m/s ²
	Destructive	980m/s ²

CHARACTERISTICS

Vibration resistance	10Hz to 55Hz 1.5mm DA
Humidity	5% to 85% RH
Ambient temperature	-40°C to 85°C
Termination	PCB
Unit weight	Approx. 25g
Construction	Flux proofed Plastic sealed

Notes: The data shown above are initial values.

COIL

Coil power	Approx. 900mW
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COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max. ⁽¹⁾	Drop-out Voltage VDC min. ⁽¹⁾	Max. Voltage VDC* ⁽²⁾	Coil Resistance Ω
5	3.75	0.5	6.0	27.8 x (1±10%)
12	9	1.2	14.4	160 x (1±10%)
24	18	2.4	28.8	640 x (1±10%)
48	36	4.8	57.6	2560 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	Making 20A, Loading 40 A, Breaking 20 A
TÜV	277V a.c., Resistive, 85°C
CQC	40 A, 277V a.c., Resistive, 85°C 30 A, 24V d.c., Resistive, 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.



HONGFA RELAY

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

2024 Rev. 1.01

ORDERING INFORMATION

Type	HF161F-40 / 12 -H S T F (XXX)			
Coil voltage	5, 12, 24, 48VDC			
Contact arrangement	H: 1 Form A			
Construction ⁽¹⁾	S: Plastic sealed		Nil: Flux proofed	
Contact material	T: AgSnO ₂			
Insulation standard	F: Class F			
Special code	XXX: Customer special requirement		Nil: Standard	

Notes: 1) Please avoid using the relay in an environment containing organic silicon, otherwise the entry of organic silicon into the relay may acceleration contact failure. If there are harmful substances and elements such as water vapor, H₂S, SO₂, NO₂, Cl, P, dust, etc., as well as unknown harmful substances and elements, in the use of environmental gases, it may lead to increased contact resistance and poor contact during the use of relays. In the above situations, please control the materials that produce harmful substances and elements or use plastic sealed type, and arrange relevant tests to confirm that it meets the requirements for actual use.

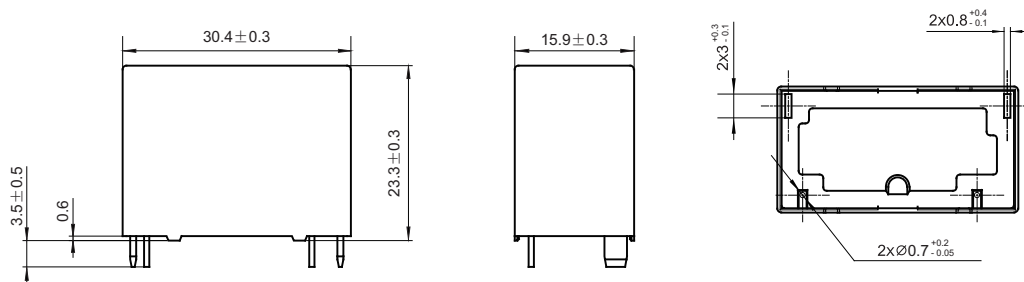
2) Water cleaning or surface process is not suggested after the flux-proofed relays are assembled on PCB.

3) 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).

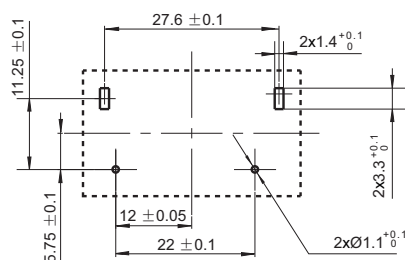
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB BOARD LAYOUT

Unit: mm

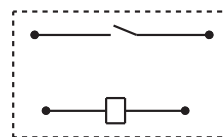
Outline Dimensions



Wiring Diagram (Bottom view)



PCB Layout (Bottom view)



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

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

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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