

HFE82V-40

DIRECT CURRENT RELAY



RoHS compliant

Features

- Ceramic brazing sealed technology guarantees no risk of arc leaking and ensures no fire or explosion.
- Filled with gas (mostly hydrogen) to effectively prevent the oxidation burnt when exposed to electricity; the contact resistance is low and stable, and the parts exposed to electricity can meet IP67 protection level.
- Carrying current 40A continuously at 85°C.
- Insulation resistance is 1000MΩ(1000 VDC), and dielectric strength between the coil and contacts is 4kV, which meets the requirements of IEC 60664-1.
- No specific polarity requirements for the connection

CONTACT DATA

Contact arrangement	1 Form A	
Contact resistance ¹⁾	≤3mΩ(at 40A)	
Contact rating	40A	
Mechanical endurance	2x10 ⁵ ops	
	Type 450V	Type 750V
Max. switching voltage	1000 VDC	1000 VDC
Max. breaking current	400A(300 VDC)1op	400A(300 VDC)1op
Max. switching power	36kW	60kW
Electrical endurance ²⁾	Switching: 2×10 ⁴ ops (450 VDC,40A)	Switching: 1×10 ³ ops (750 VDC,40A)
	Making: 7.5×10 ⁴ ops (450 VDC,40A)	Making: 7.5×10 ⁴ ops (750 VDC,40A)
Current carrying ³⁾ capacity	40A:Cont.	
	60A:1h	
	80A:20min	
	160A:30s	
	320A:2s	
	400A:0.6s	

Notes: 1) The above values are the initial values.

2) Unless otherwise specified, the temperature of electrical endurance is at 23°C and the on-off ratio is 0.6s:5.4s.

The coil was not connected to the surge suppression device during the test. Please note that the use of a well-connected diode will greatly increase the release time of the relay, resulting in a reduced lifetime.

3) Ambient temperature is at 85°C and cross section area of wire is 10mm² min. See Fig. Endurance Capacity Curve for more information.

COIL

23°C

Rated Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil power W
12	≤9	≥1	3
24	≤18	≥2	3

CHARACTERISTICS

Insulation resistance	1000MΩ (1000 VDC)	
Dielectric strength	Between coil & contacts	4000 VAC 1min
	Between open contacts	3000 VAC 1min
Operate time (at rated volt.)	≤30ms	
Release time (at rated volt.)	≤10ms	
Shock resistance	Functional	196m/s ²
	Destructive	490m/s ²
Vibration resistance	10Hz ~ 500Hz 49m/s ²	
Humidity	5% ~ 85% RH	
Ambient temperature	-40°C ~ 85°C	
Load terminal structure	M4 screw terminal female	
Unit weight	Approx. 160g	
Outline Dimensions	67.0x32.6x47.0mm	

Notes: The above values are the initial values measured at room temperature.



HONGFA RELAY

ISO9001、IATF/TS16949、ISO14001、OHSAS18001、IECQ QC 080000 CERTIFIED

2022 Rev. 1.00

ORDERING INFORMATION

Type	HFE82	V	-40/	750-	12-	H-	L	5	J	-1	(XXX)
Application	V: Vehicle										
Contact rating	40: 40A										
Load voltage	Nil: 450 VDC 750: 750 VDC										
Coil voltage	12: 12 VDC 24: 24 VDC										
Contact arrangement	H: 1 Form A										
Coil terminal structure	L: Lead wire										
Load terminal structure	5: Screw terminal female										
Base structure	J: Layout base without mounting boss										
Coil characteristic	1: Single coil										
Special code ¹⁾	XXX: Customer special requirement Nil: Standard										

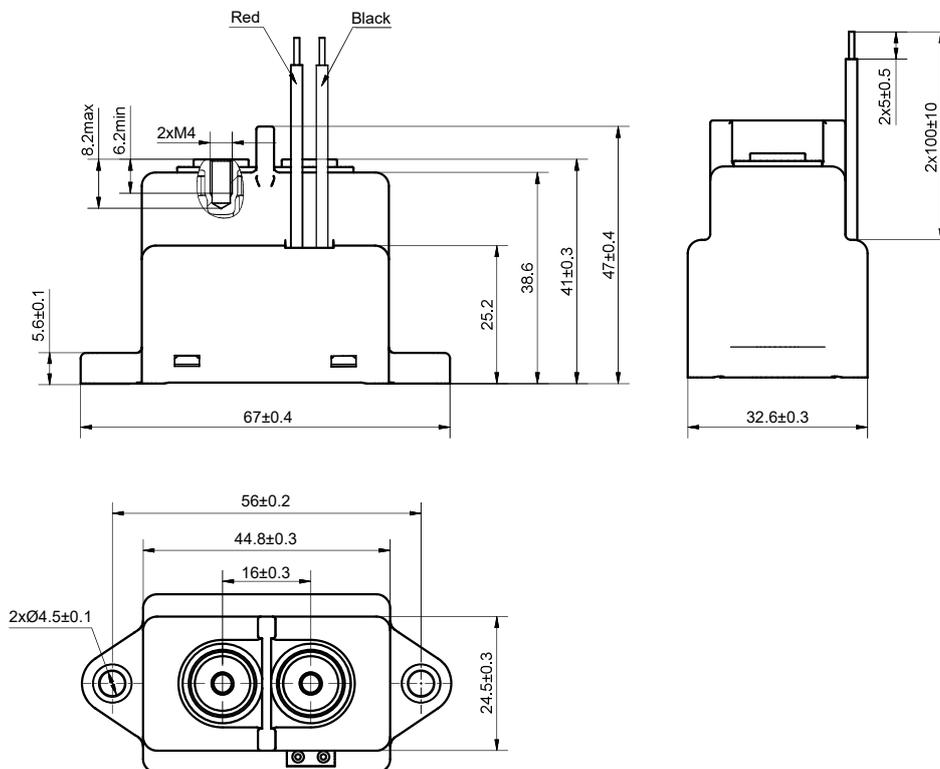
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Outline Dimensions

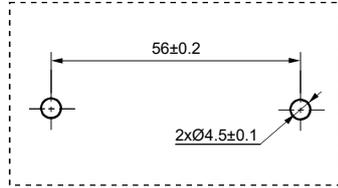
HFE80V-40/XXX-XX-H-L5J1



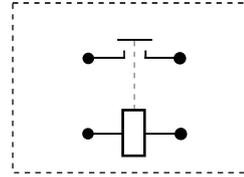
OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Mounting Hole



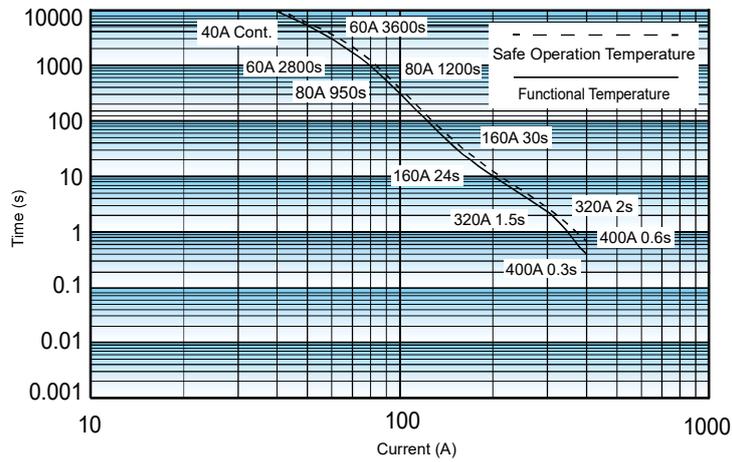
Terminal Arrangement



Note: No polarity on the load and coil sides.

CHARACTERISTIC CURVES

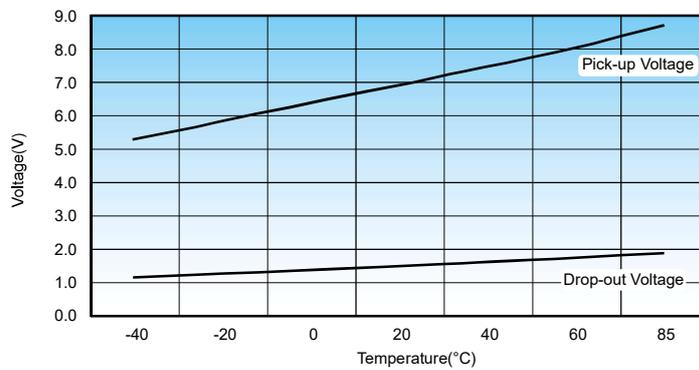
Endurance Capacity Curve



Notes:

1. The upper limit of safe operation temperature and functional temperature are set for 180°C and 130°C respectively.
2. To maintain the maximum long-term operating performance, absolute temperature should not exceed 130°C.
3. The data above is measured at the environment temperature 85°C with cross section area of wire $\geq 10\text{mm}^2$.
4. When the current is $\geq 400\text{A}$, the relay is likely to weld.

Pick-up Voltage / Drop-out Voltage Curve



CAUTIONS

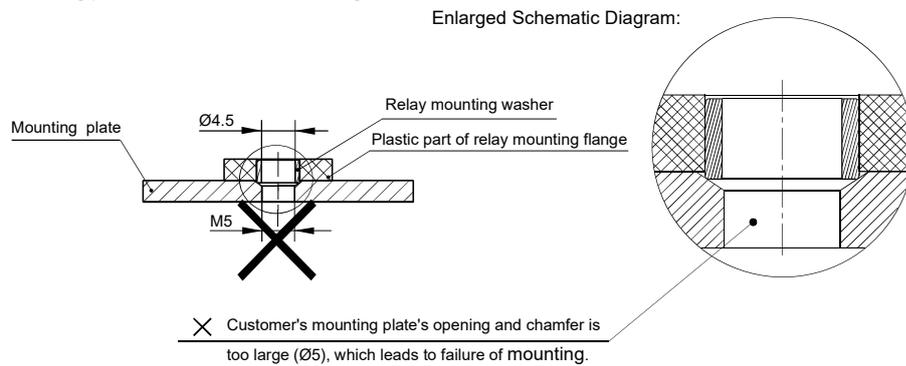
1. In case of loosening, please use washer when install the relay with M4 screw, and the torque within 2N·m to 3N·m, The screw tightening torque at terminals shall be within 2N·m to 3N·m. The torque beyond the range may cause damage.

Mounting for load terminal				Mounting for relay body	
Mounting way	Torque requirement	Hole dia. of copper bus bar	Thickness of copper bus bar	Mounting way	Torque requirement
M4 Screw	2N·m~3N·m	Ø4.0mm~Ø4.5mm	1mm~2mm	M4 Screw	2N·m ~ 3N·m

- Relay terminal lock vertically, please pre-lock first and then lock when installing ,repeat locking is not recommended.
- When the customer uses special crews and nuts,such as nylok,need to communicate and confirm with Hongfa.
- When the customer has special installation requirement,such as upside down,multi busbar connection,need to communicate and confirm with Hongfa.
- Be careful that oils and foreign matter do not stick to the main terminal part and please use the wire with min. cross section area 10mm² min, otherwise the terminal parts may have abnormal heating.
- The recommended thickness of copper bus-bar is 1mm to 2mm, otherwise it may cause screw loose or can not guarantee a tight mounting.
- Cautions of mounting for relay body:

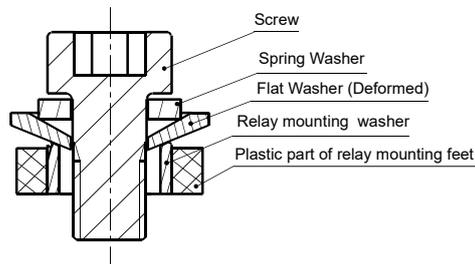
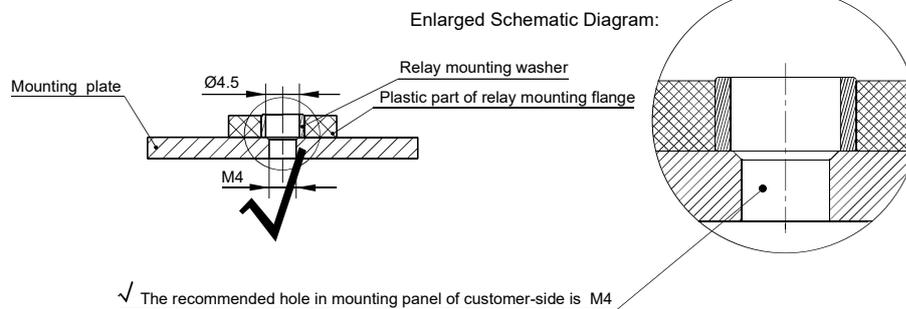
Unrecommended method

The hole of mounting plate at customer-side is too large.



Recommended method

The hole in mounting plate at customer-side is M4



When use M4 screw, the thickness and strength of the washer needs to be guaranteed or it may deform and burst the cover.

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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