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	≤3mΩ(at 40A)	
Contact rating	40A	
Mechanical endurance	$2x10^5$ops	
	Type 450V	**Type 750**V
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 1)	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 2) capacity	40A:Cont.	
	60A:1h	
	80A:20min	
	160A:30s	
	320A:2s	
	400A:0.6s	

Notes: 1) Unless otherwise specified, the temperature of eletrical 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.
2) 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℃

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/s²
	Destructive	490m/s²
Vibration resistance		10Hz ~ 500Hz 49m/s²
Humidity		5% ~ 85% RH
Ambient temperature		-40℃ ~ 85℃
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.

ORDERING INFORMATION

HFE82	V	-40/	750-	12-	H-	L	5	J	-1	(XXX)

Type	
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

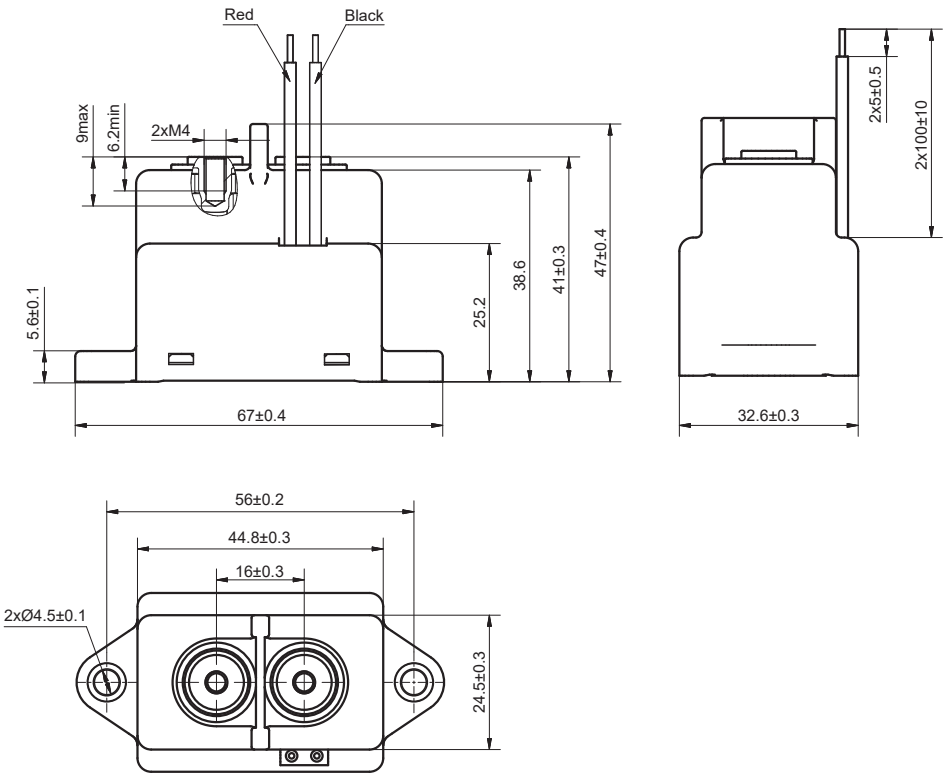
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Outline Dimensions

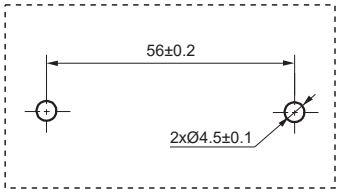
HFE80V-40/XXX-XX-H-L5J1



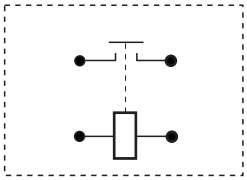
OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Mounting Hole



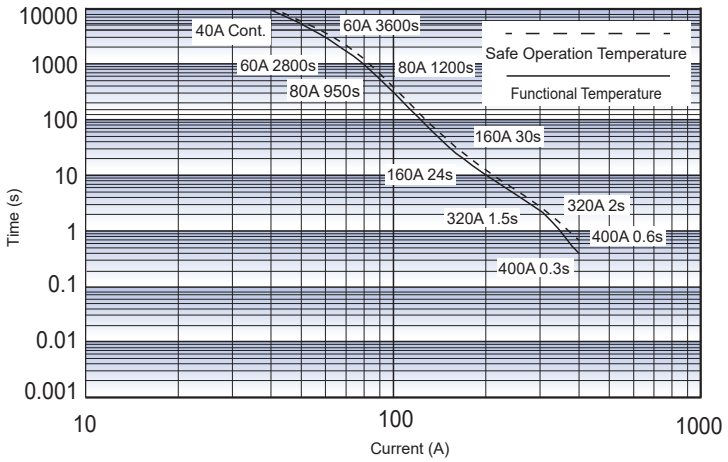
Terminal Arrangement



Note: No polarity on the load and coil sides.

CHARACTERISTIC CURVES

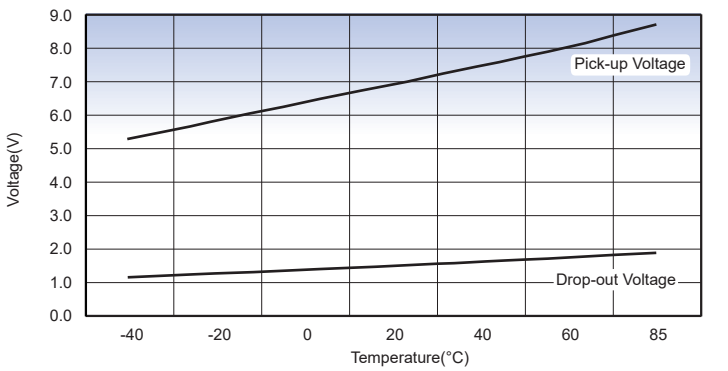
Endurance Capacity Curve



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 ≥10mm^2.
4. When the current is ≥400A，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.

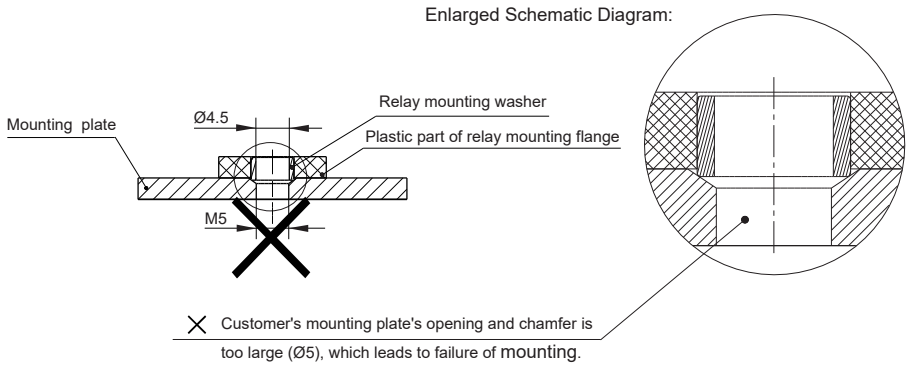
Mounting for load terminal				Relay mounting	
Mounting way	Torque requirement	Hole dia. of copper bus bar	Thickness of copper bus bar	Mounting way	Torque requirement
M4 Screw	2N·m~3N·m	Ø4.0mm~Ø4.5mm	1mm~2mm	M4 Screw	2N·m ~ 3N·m

2. 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 10mm^2 min, otherwise the terminal parts may have abnormal heating.

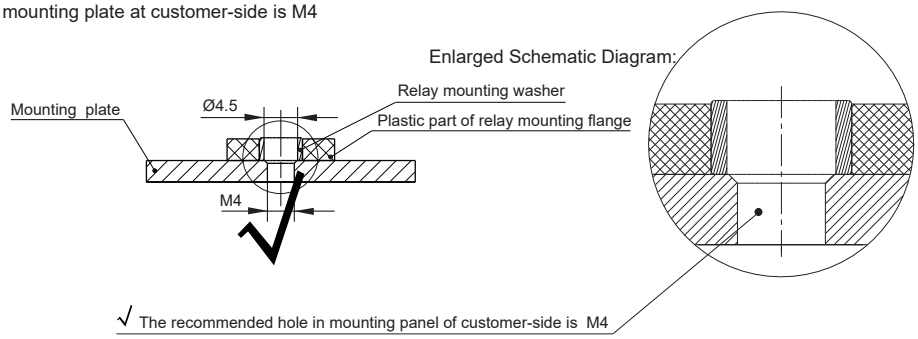
3.The recommended thickness of copper bus-bar is 1mm to 2mm, otherwise it may cause screw loose or can not guarantee a tight mounting.

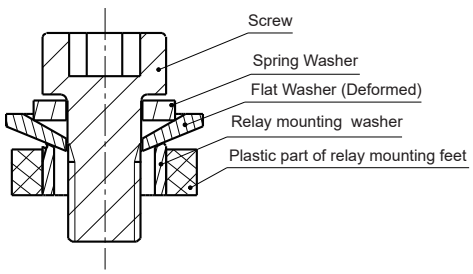
4. Cautions of relay mounting:

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.