HFE82V-250 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 250A 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.

CONTACT DATA

Contact arrangement	1 Form A
Contact resistance	≤0.2mΩ(at 250A)
Contact rating	250A
Mechanical endurance	2x10^{5}ops
Max. switching voltage	750 VDC
Max. breaking current	2000A(450VDC) 1op
Max. switching power	225kW
Electrical endurance 1)	Making:2.5×10^{4}ops(22.5 VDC, C=1100μf,Inrush 400A，Steady 250A)
	Making:1ops(300 VDC, C=1100μF,Inrush1350A)
	Breaking:50ops(450 VDC,400A)
	Switching:1×10^{3}ops(450 VDC,250A)
	Switching:10ops(750 VDC,-250A)
	Switching:500ops(750 VDC,250A)
	Breaking:1op(450 VDC,2000A)
Current carrying 2) capacity	250A:Cont.
	375A:10min
	500A:120s
	1000A:30s
	2500A: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 100mm^2 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	6
24	≤18	≥2	6

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.)		≤50ms
Release time (at rated volt.)		≤30ms
Shock resistance	Functional	Deenergized:98m/s^2 Energized: 196m/s^2:196m/s^2
	Destructive	490m/s^2
Vibration resistance		10Hz ~ 500Hz 49m/s^2
Humidity		5% ~ 85% RH
Ambient temperature		-40℃ ~ 85℃
Load terminal structure		M6 screw terminal female
Unit weight		Approx.580g
Outline Dimensions		95.0x45.0x85.0mm 97.0x45.5x84.7mm

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

ORDERING INFORMATION

	HFE82	V	-250/	750-	12-	H	L	5	Y	(XXX)
Type										
Application	**V:** Vehicle									
Contact rating	**250:** 250A									
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									
Mounting	**Nil:**Vertical mounting **Y:** Horizontal mounting									
Special code[1)]	**XXX:** Customer special requirement **Nil:** Standard									

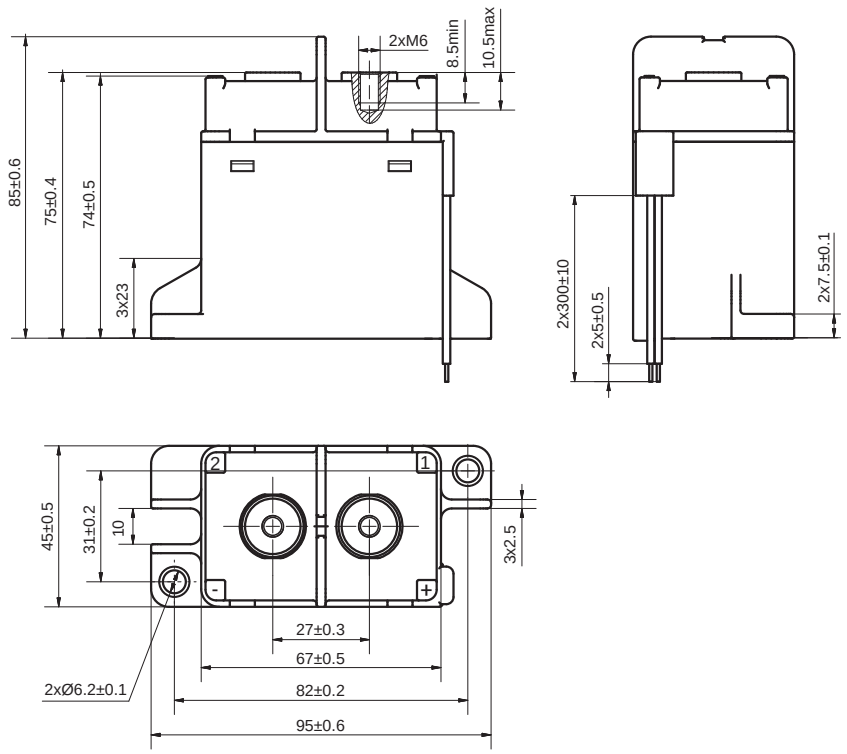
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Outline Dimensions

HFE82V-250/XXX-XX-12-HL5

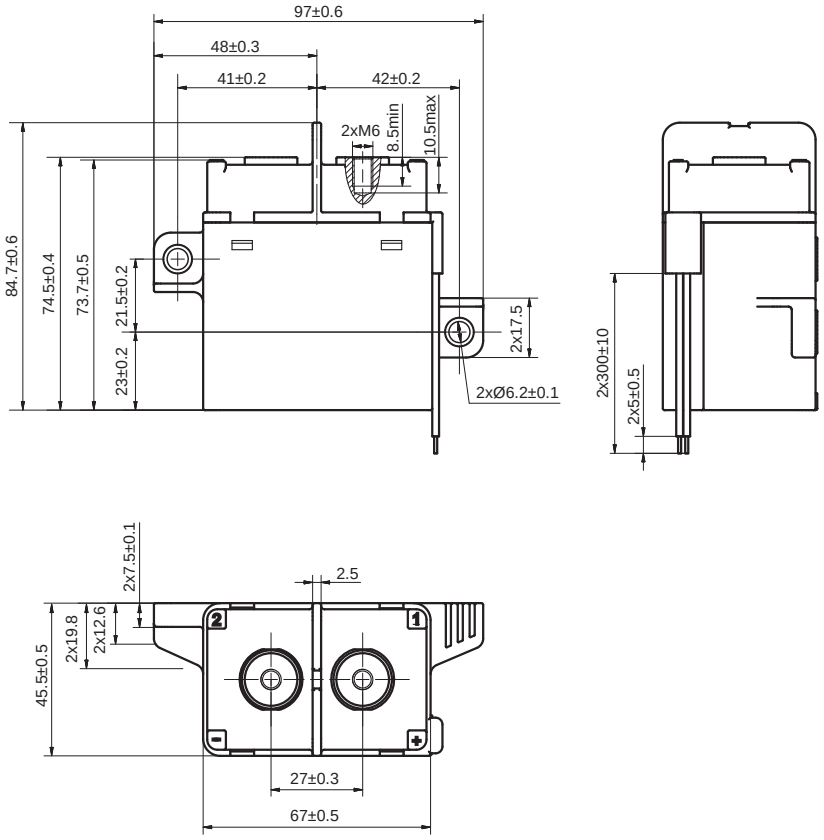


OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

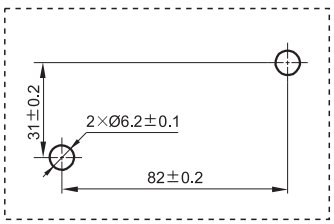
Outline Dimensions

HFE82V-250/XXX-XX-12-HL5Y

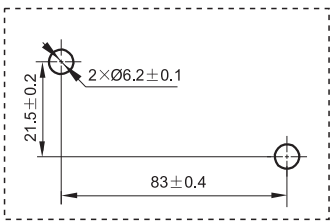


Mounting Hole

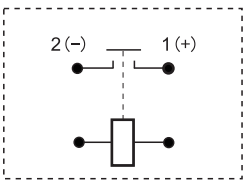
Vertical mounting



Horizontal mounting



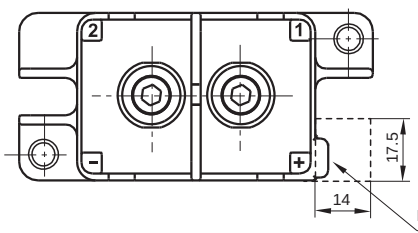
Terminal Arrangement



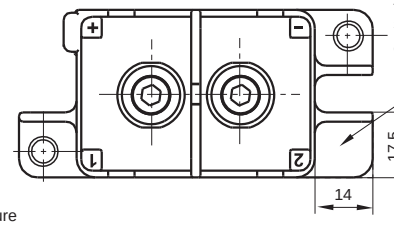
Note: The load side has polarity.
No polarity on the coil side.

Mounting Direction of Relay

Correct mounting direction

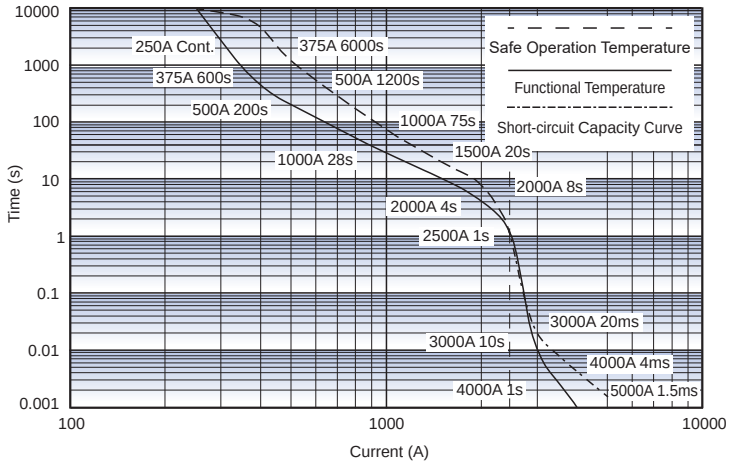


Wrong mounting direction



CHARACTERISTIC CURVES

Endurance Capacity Curve



Notes:

1.The upper limit of safe operation temperature and functional temperature are 180℃ and 130℃ respectively.

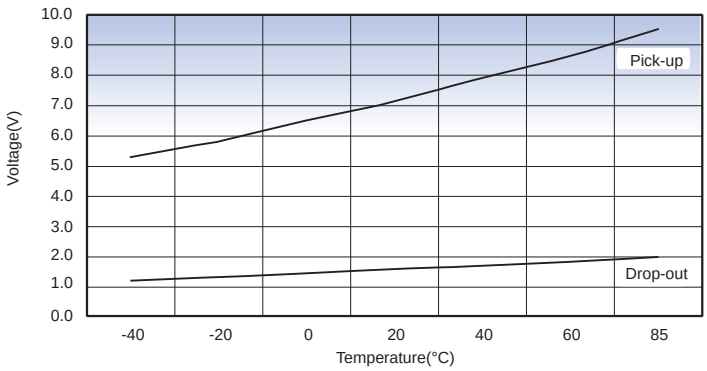
2.If the product needs to be operated for a long time, the upper temperature limit should not exceed 130℃.

3.The ambient temperature is 85℃, and the cross sectional area of the wire is ≥100mm².

4.When the current is ≥2000A, the relay is likely to weld without fire or explosion.

5.The dash-dotted line is the short-circuit capacity curve of the relay. when the current is ≥3500A, the contact may bounce without fire or explosion.

Pick-up Voltage / Drop-out Voltage Curve



CAUTIONS

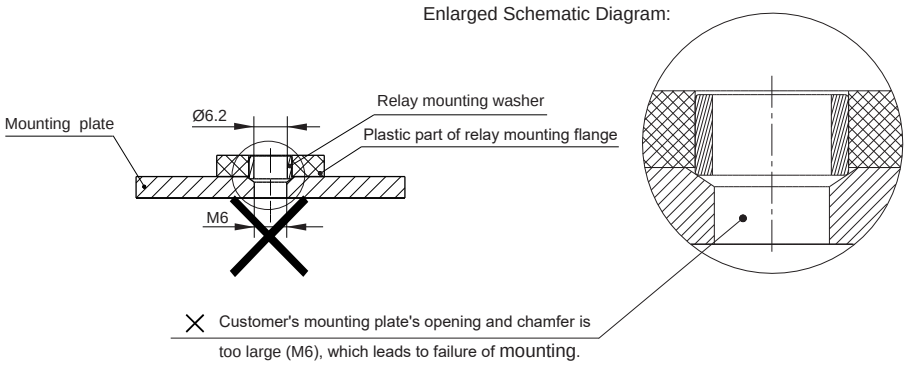
1. In case of loosening, please use washer when mount the relay with M5 screw, and the torque within 3N·m to 4N·m, The screw tightening torque at terminals shall be within 9N·m to 11N·m. The torque beyond the range may cause damage.

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
M6 Screw	9N·m ~ 11N·m	Ø6.0mm~Ø6.5mm	3mm	M5 Screw	3N·m ~ 4N·m

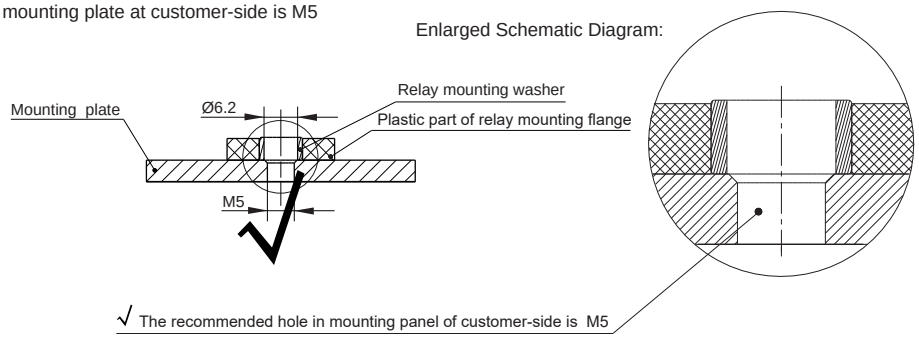
2. Be careful that oils and foreign matter do not stick to the main terminal part and please use the wire with min. cross section area 100mm^2, otherwise the terminal parts may have abnormal heating.

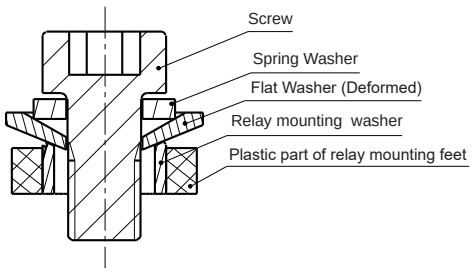
3. Cautions of relay mounting:

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



Recommended method
The hole in mounting plate at customer-side is M5





When use M5 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.