HFE82V-600 　　DIRECT CURRENT RELAY

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 600A 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.
- Coil with energy-saving devices

RoHS compliant

CONTACT DATA

Contact arrangement	1 Form A
Contact resistance	≤0.2mΩ(at 20A)
Contact rating	600A
Mechanical endurance	2×10^5 ops
Max. switching voltage	1000 VDC
Max. breaking current	2500A(800 VDC) 1op
Max. switching power	600kW
Electrical endurance [1]	Making:5×10^4ops(750 VDC 120A,0.6s on:5.4s off)
	Switching:1×10^5 ops(800 VDC,10A)
	Switching:1×10^4 ops(800 VDC,100A)
	Switching:2×10^3 ops(750 VDC,300A)
	Switching:500ops(750 VDC,600A)
	Reverse switching:5×10^3 ops(750 VDC,-100A)
	Reverse switching:1×10^3ops(750 VDC,-300A)
	Reverse switching:300ops(750 VDC,-600A)
	Breaking:1op(800 VDC,2500A)
	Switching:100ops(1000 VDC,600A)
Current carrying [2] capacity	600A:Cont.
	800A:20min
	1000A:5min
	3000A:4s
	8000A:10ms

COIL
23°C

Rated Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil power W
12	≤9	1~9	Switch on:50(time:0.2s) Holding:10
24	≤18	2~18	Switch on:50(time:0.2s) Holding:10

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	196m/s²
	Destructive	490m/s²
Vibration resistance		10Hz ~ 500Hz 49m/s²
Humidity		5% ~ 85% RH
Ambient temperature		-40°C ~ 85°C
Load terminal structure		M10 screw terminal female
Unit weight		Approx.1850g
Outline Dimensions		146.0x66.6x132.8mm

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

Notes: 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 200mm² min. See Fig. Endurance Capacity Curve for more information.

3) 8000A 10ms is short circuit carrying test，relay contact may be welded，but will not burn or exploded.

ORDERING INFORMATION

	HFE82	V	-600/	750-	24-	H-	L	6	(XXX)
Type									

Application	**V:** Vehicle	
Contact rating	**600:** 600A	
Load voltage	**Nil:** 450VDC **750:** 750VDC **1000:** 1000VDC	
Coil voltage	**12:** 12 VDC **24:** 24 VDC	
Contact arrangement	**H:** 1 Form A	
Coil terminal structure	**L:** Lead wire	
Load terminal structure	**6:** Screw terminal female and copper bus bar terminal	
Special code[1]	**XXX:** Customer special requirement **Nil:** Standard	

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

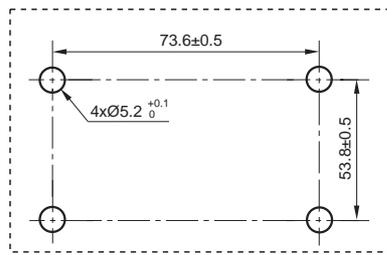## OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT   Unit: mm
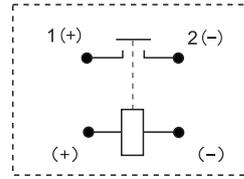
Outline Dimensions

HFE82V-600/XXX-XX-H-L6
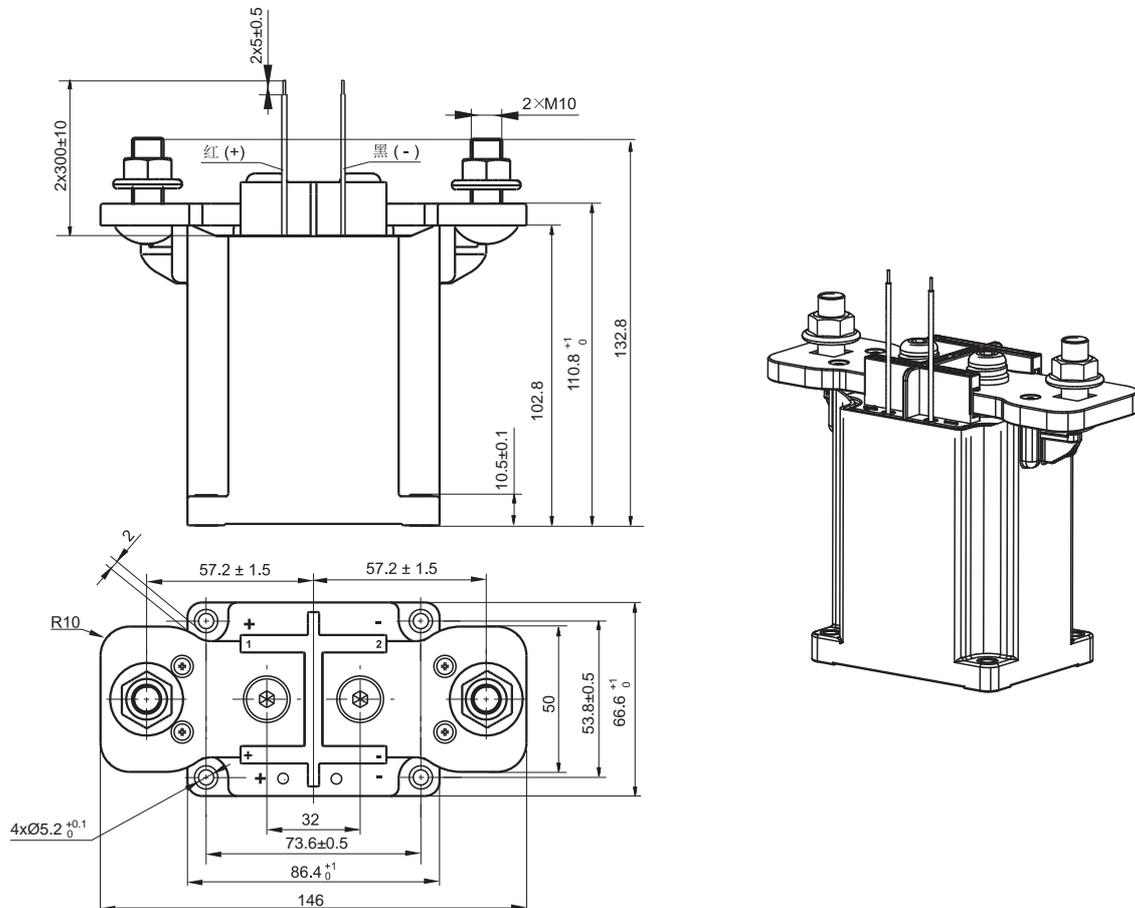
OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT
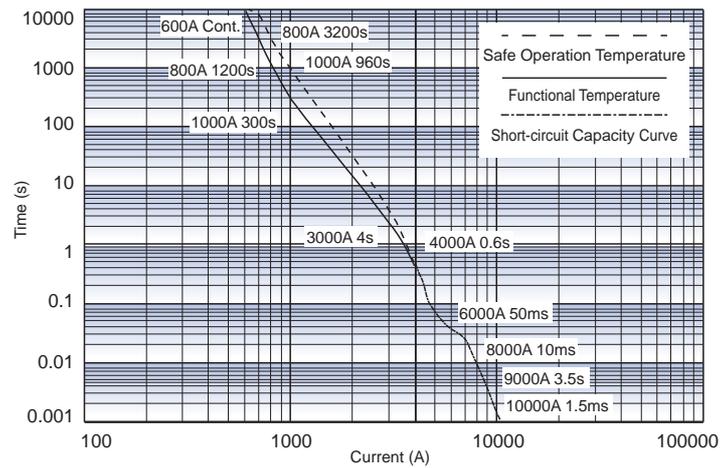
Unit: mm

Mounting Hole

73.6±0.5

4xØ5.2 +0.1 0

53.8±0.5

Terminal Arrangement

1 (+)   2 (−)

(+)   (−)

Note: Polarity on the load and coil sides.

CHARACTERISTIC CURVES

Endurance Capacity Curve

600A Cont.   800A 3200s
800A 1200s   1000A 960s
1000A 300s

Safe Operation Temperature
Functional Temperature
Short-circuit Capacity Curve

3000A 4s   4000A 0.6s
6000A 50ms
8000A 10ms
9000A 3.5s
10000A 1.5ms

Time (s) / Current (A)

Notes:
1.The upper limit of safe operation temperature and functional temperature are 180°C and 130°C respectively.
2.If the product needs to be operated for a long time, the upper temperature limit should not exceed 130°C.
3.The ambient temperature is 85°C, and the cross section area of the wire is ≥200mm².
4.When the relay is operated under current ≥4000A for a long-term, it may weld without fire or explosion.

Pick-up Voltage / Drop-out Voltage Curve

Pick-up

Drop-out

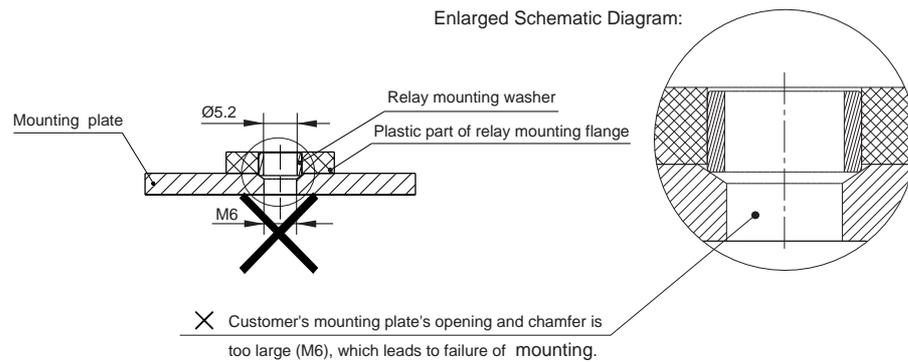Voltage(V) / Temperature(°C)
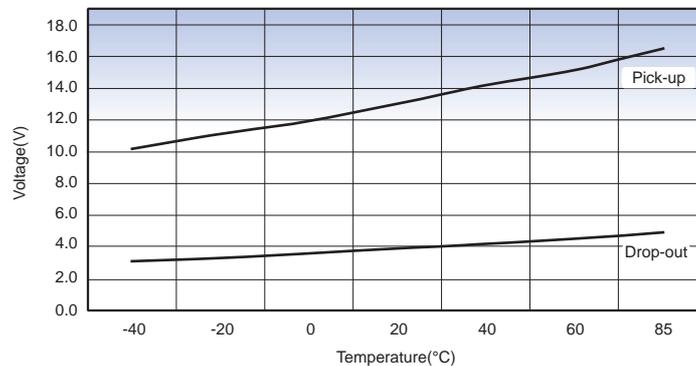
CAUTIONS

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 20N·m to 25N·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
M10 Bolt	20N·m ~ 25N·m	Ø10mm~Ø10.5mm	≥4mm	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 200mm^2, otherwise the terminal parts may have abnormal heating.

3. The product has energy-saving board inside and the coil will switch automatically after 0.2s drive, but repeated switching within 0.2s may cause failure of relay.

4. The product with PCB inside cannot be driven by ramp up voltage, please drive the coil by step type power ,otherwise the relay may fail to work.
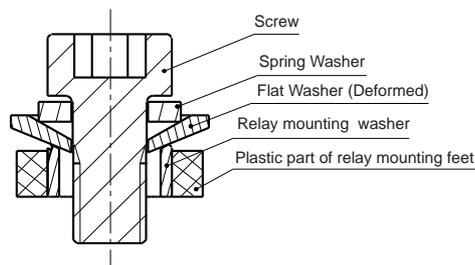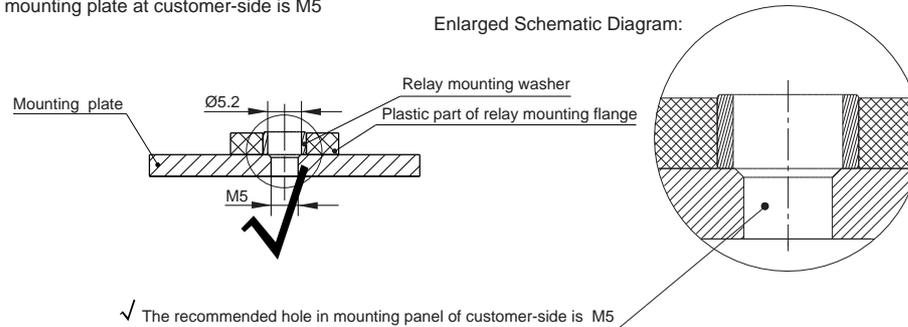
5. Cautions of relay mounting:

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

Enlarged Schematic Diagram:

Mounting plate   Ø5.2   Relay mounting washer   Plastic part of relay mounting flange   M6

✕ Customer's mounting plate's opening and chamfer is too large (M6), which leads to failure of mounting.

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

Enlarged Schematic Diagram:

Mounting plate   Ø5.2   Relay mounting washer   Plastic part of relay mounting flange   M5

√ The recommended hole in mounting panel of customer-side is M5

Screw
Spring Washer
Flat Washer (Deformed)
Relay mounting washer
Plastic part of relay mounting feet

When use M5 screw, the thickness and strength of the washer needs to be guaranteed
or it may deform and burst the cover.

Disclaimer