HFE85P-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; the contact resistance is low and stable, and contact part can meet IP67 protection level.
- Carrying current 250A continuously at 85℃.
- Insulation resistance is 1000MΩ(1000 VDC), and dielectric strength between the coil and contacts is 3.3kV, which meets the requirements of IEC 60664-1.

CONTACT DATA

Contact arrangement	1 Form A
Contact resistance	≤0.3mΩ(at 200A)
Contact rating	250A
Mechanical endurance	2 x 10^5 ops
Max. switching voltage	1000 VDC
Max. breaking current	2000A(320 VDC)1op
Max. switching power	400kW
Electrical endurance 1)	Breaking:1500ops(450 VDC, 250A)
	Breaking:100ops(450 VDC, -250A)
	Breaking:500ops(750 VDC, 250A)
	Breaking:50ops(750 VDC, -250A)
	Breaking:1op(320 VDC, 2000A)
	Breaking:500ops(1000 VDC, 250A)
Current carrying 2) capacity	250A: Cont.
	320A: 10min
	500A: 1min
	2000A: 1s

Notes: 1) Unless otherwise specified,the temperature of eletrical endurance is at 23℃ 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℃ and cross section area of wire is 75mm² 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	≥4.5	Switch on:26W Holding:3W
24	≤9	≥4.5	

CHARACTERISTICS

Insulation resistance		1000MΩ (1000 VDC)
Dielectric strength	Between coil & contacts	3300 VAC 1 min
	Between open contacts	3300 VAC 1 min
	Between contacts & auxiliary contacts	3300 VAC 1 min
Operate time (at rated volt.)		≤30ms
Release time (at rated volt.)		≤10ms
Shock resistance	Functional	196m/s²
	Destructive	490m/s²
Vibration resistance		10Hz~55Hz 1.5mm DA
Humidity		5%~85% RH
Ambient temperature		-40℃ ~ 85℃
Load terminal structure		M6 screw terminal female
Unit weight		Approx. 400g
Outline Dimensions		80.4x62.3x72.8mm

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

ORDERING INFORMATION

	HFE85	P	-250	/1000-	12-	H	A	L	5	P	-5	(XXX)

Type	
Application	**P:** PV and energy storage
Contact rating	**250:** 250A
Load voltage	**Nil:** 450VDC **750:** 750VDC **1000:** 1000VDC
Coil voltage	**12:** 12VDC **24:** 24VDC
Contact arrangement	**H:** 1 Form A
Aux. contact arrangement	**A:** 1 Form A
Coil terminal structure	**L:** Lead wire
Load terminal structure	**5:** Screw terminal female
Coil power	**P:** Energy-saving type
Coil characteristic	**5:** Single coil with PWM
Special code[1)]	**XXX:** Customer special requirement **Nil:** Standard

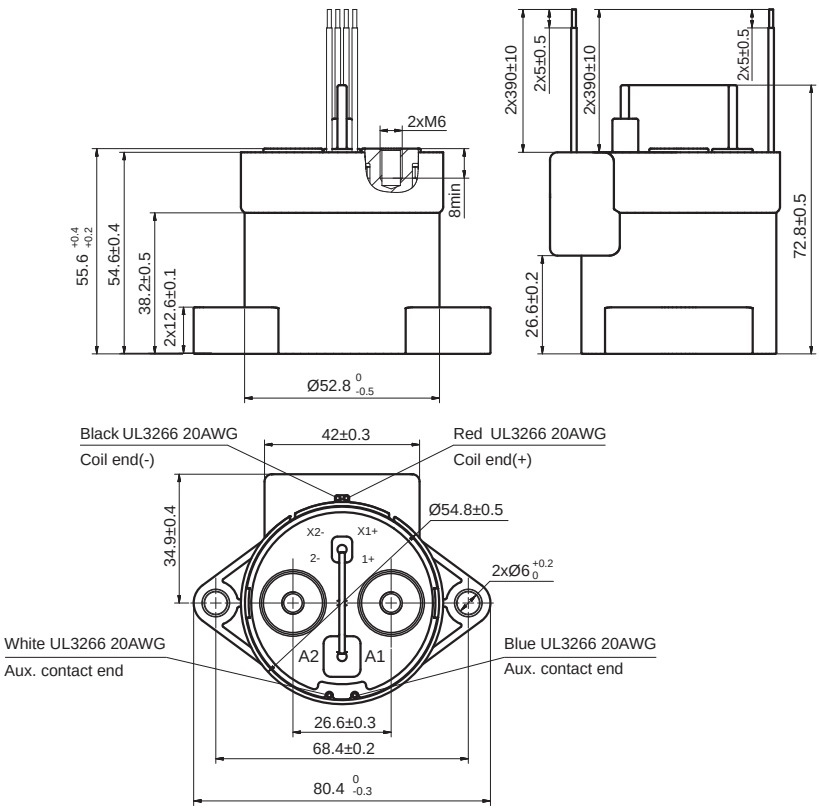
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS,MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Outline Dimensions

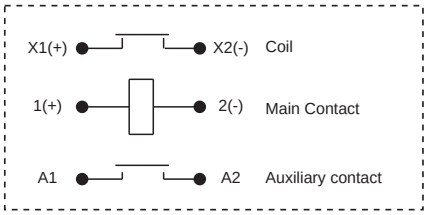
HFE85P-250/XXX-XX-HAL5P-5



OUTLINE DIMENSIONS,MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

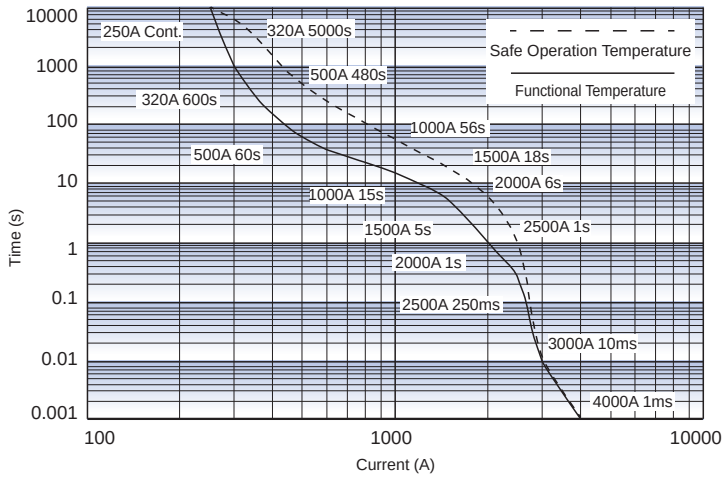
Terminal Arrangement



Note: Both the load and coil sides have polarity.
No polarity on the auxiliary contacts.

CHARACTERISTIC CURVES

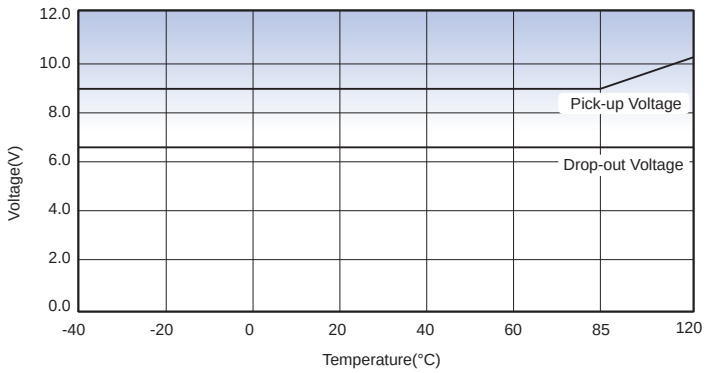
Endurance Capacity Curve



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 ≥75mm^2.
4. When the current is ≥2500A, the relay is likely to be welded, but without any fire or explosion.

Pick-up Voltage / Drop-out Voltage Curve



CAUTIONS

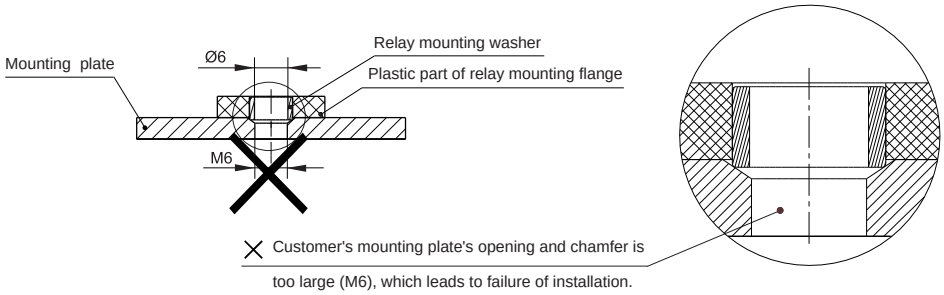
1. In case of loosening,please use washer when mount the relay with M5 screw, and the torque within 3N·m to 4N·m;The screw tightening torque at terminals shall be within 6N·m to 8N·m.The torque beyond the range may cause damage.

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	6N·m~8N·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 75mm^2, otherwise the terminal parts may have abnormal heating.
3. The recommended thickness of copper bus-bar is 3mm, otherwise it may cause screw loose or can not guarantee a tight mounting.
4. Cautions of Relay Mounting:

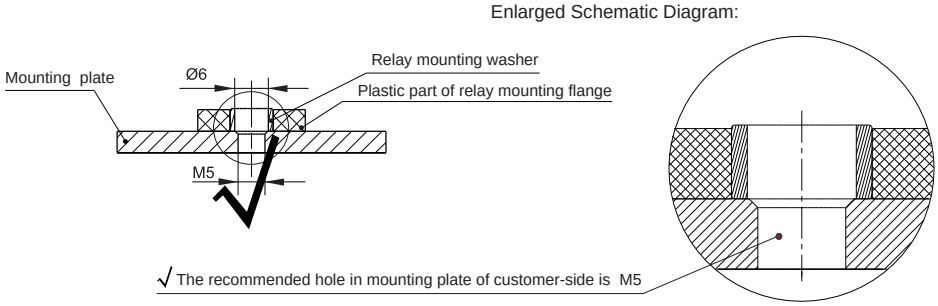
Unrecommended method
The hole of mounting plate at customer-side is too large.

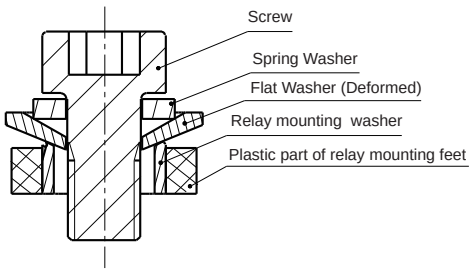
Enlarged Schematic Diagram:



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

Enlarged Schematic Diagram:





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.