HFE82V-300C   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 300A continuously at 85°C.
- Insulation resistance is 1000MΩ(1000 VDC), and dielectric strength between the coil and contacts is 2.6kV, which meets the requirements of IEC 60664-1.

RoHS compliant

CONTACT DATA

Contact arrangement	1 Form A
Contact resistance [1]	≤0.5mΩ(at 300A)
Contact rating	300A
Mechanical endurance	2×10^5ops
Max. switching voltage	1000 VDC
Max. breaking current	2000A(750 VDC)1op
Max. switching power	300kW

	Type 450V	Type 750V
Electrical endurance [2]	Making:7.5×10^4ops (Steady140A, Contact Voltage 20 VDC)	Making:7.5×10^4ops (Steady140A, Contact Voltage 20 VDC)
	Breaking:1000ops (450 VDC,300A)	Breaking:500ops (750 VDC,300A)
	Breaking:1000ops (450 VDC,-300A)	Breaking:500ops (750 VDC,-300A)
	Breaking:1op (450 VDC,2000A)	Breaking:1op (750 VDC,2000A)
	Breaking:1op (450 VDC,-2000A)	Breaking:1op (750 VDC,-2000A)
Current carrying [3] capacity	300A:Cont.	
	450A 5min	
	600A 2min	
	900A 30s	
	1000A 25s	

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

2) 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.

3) Ambient temperature is at 85°C and cross section area of wire is 100mm² 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	6
24	≤18	≥2	6

CHARACTERISTICS

Insulation resistance		1000MΩ(1000 VDC)
Dielectric strength	Between coil & contacts	2600 VAC 1min
	Between open contacts	2600 VAC 1min
Operate time (at rated volt.)		≤30ms
Release time (at rated volt.)		≤10ms
Shock resistance	Functional	Close:588 m/s² Open:196 m/s²
	Destructive	588m/s²
Vibration resistance		10Hz ~ 500Hz 49m/s²
Humidity		5% ~ 85% RH
Ambient temperature		-40°C ~ 85°C
Load terminal structure		M6 screw terminal female
Unit weight		Approx.370g
Outline Dimensions		88.3x42.5x74.5mm(HC5) 85.1x42.5x74.5mm(HC5Y)

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

ORDERING INFORMATION

	HFE82	V	-300	C/	750-	12-	H-	C	5	Y	-1	(XXX)

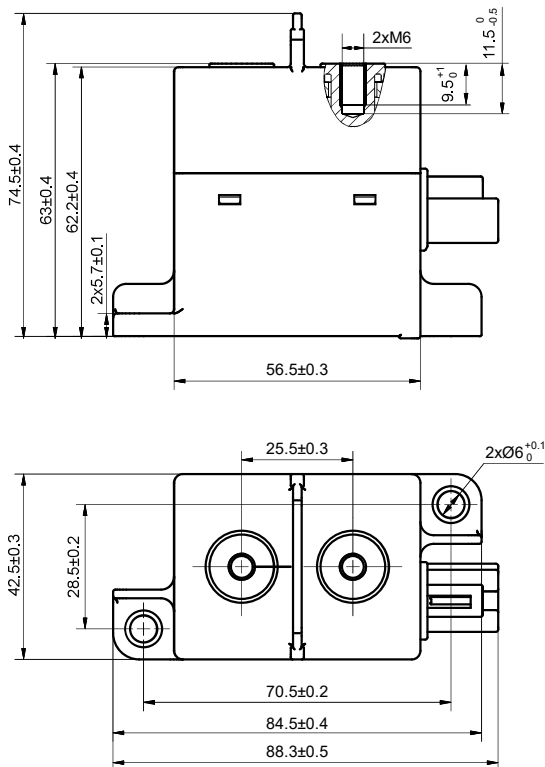|	
Type	
Application	**V:** Vehicle
Contact rating	**300:** 300A
Series breakdown	**C:** C series
Load voltage	**Nil:** 450 VDC **750:** 750 VDC
Coil voltage	**12:** 12 VDC **24:** 24 VDC
Contact arrangement	**H:** 1 Form A
Coil terminal structure	**C:** Connector **Q:** QC terminal
Load terminal structure	**5:** Screw terminal female
Mounting	**Nil:** Vertical mounting **Y:** Horizontal mounting
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.
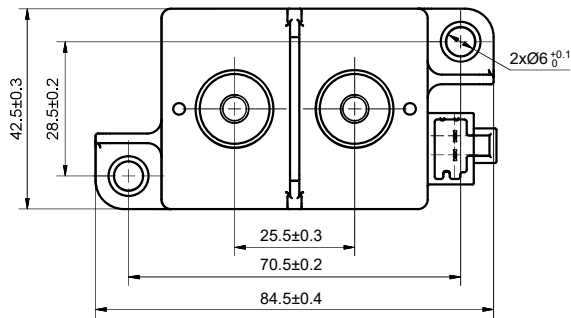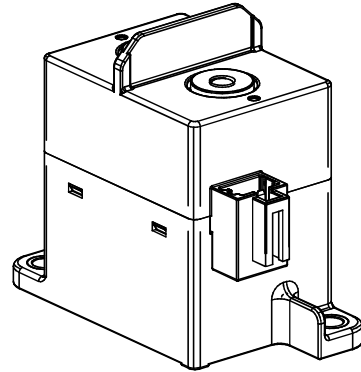
OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT   Unit: mm

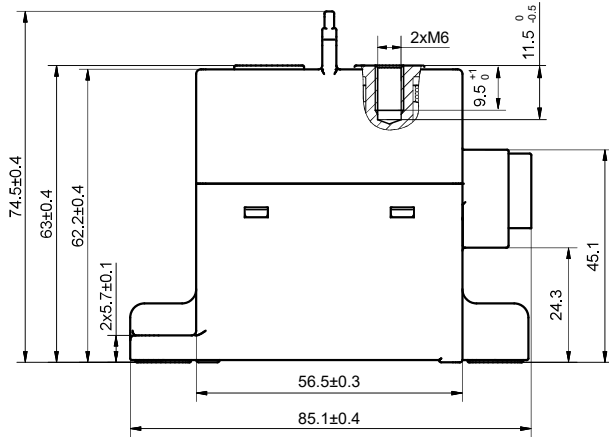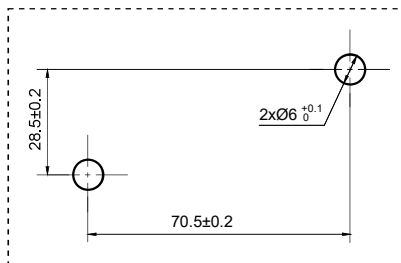Outline Dimensions

HFE82V-300C/XXX-XX-H-C5-1
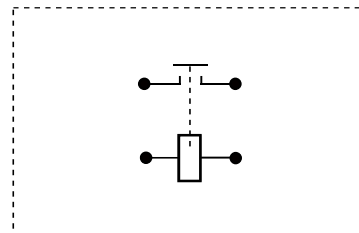
Outline Dimensions

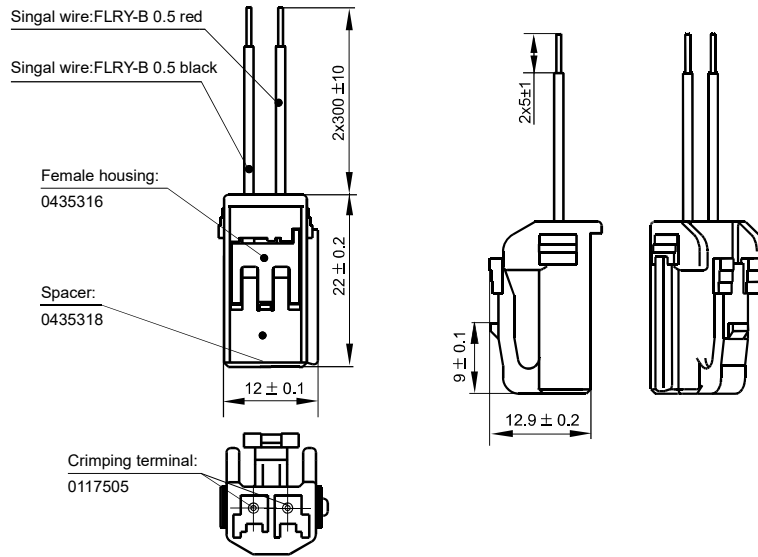HFE82V-300C/XXX-XX-H-C5-1(917)

Mounting Hole

Terminal Arrangement

Note: No polarity on the load and coil sides.

C:Connector

(Configured by customers:THB 0435 series, Yazaki 7283-1020)

Singal wire:FLRY-B 0.5 red

Singal wire:FLRY-B 0.5 black

Female housing:
0435316

Spacer:
0435318

2×300 ±10

22 ± 0.2

12 ± 0.1

Crimping terminal:
0117505

2×5±1

9 ± 0.1

12.9 ± 0.2

CHARACTERISTIC CURVES

Endurance Capacity Curve
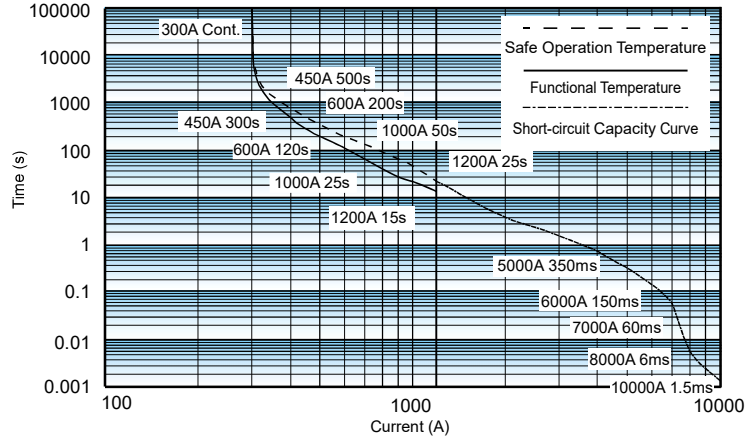
Notes:
- 1.The upper limit of safe operation temperature and functional temperature are 180°C and 130°C respectively.
- 2.If the product needs to be operated for a long time, the upper temperature limit should not exceed 130°C.
- 3.The ambient temperature is 85°C, and the cross section area of the wire is ≥100mm².
- 4.When the relay is operated under current ≥2000A for a long-term, it may weld without fire or explosion.
- 5.The dash-dotted line refers to the short-circuit capacity curve of the relay without fire or explosion; when the short-circuit current is≥6000A, the contact may open.

Pick-up Voltage / Drop-out Voltage Curve
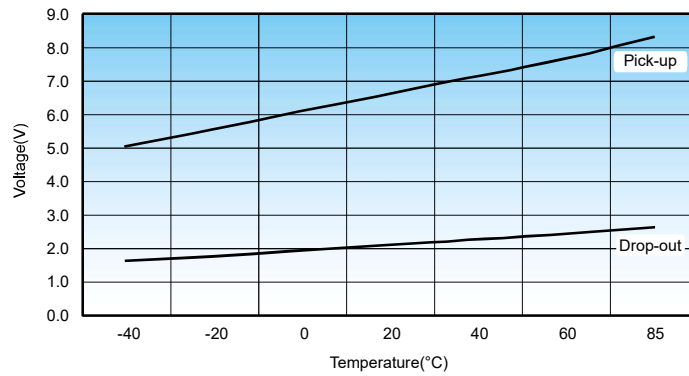
CAUTIONS

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.
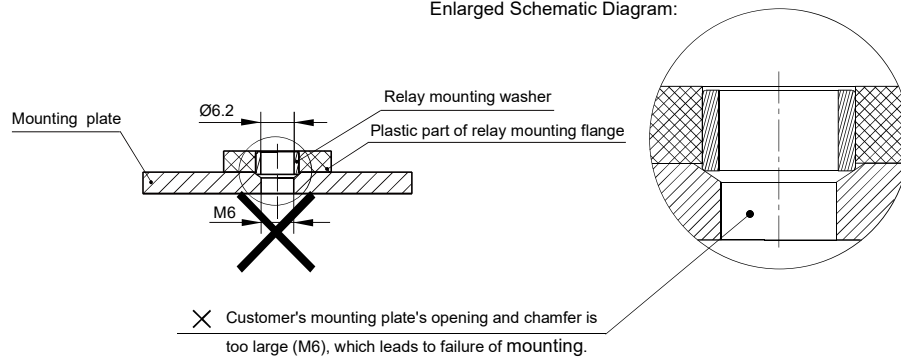
Mounting for load terminal				Mounting for relay body	
Mounting way	Torque requirement	Hole dia. of copper bus bar	Thickness of copper bus bar	Mounting way	Torque requirement
M6 Screw	6N·m ~ 8N·m	Ø6.0mm~Ø6.5mm	2mm~3mm	M5 Screw	3N·m ~ 4N·m

2. Relay terminal lock vertically, please pre-lock first and then lock when installing ,repeat locking is not recommended.

3. When the customer uses special crews and nuts,such as nylok,need to communicate and confirm with Hongfa.

4. When the customer has special installation requirement,such as upside down,multi busbar connection,need to communicate and confirm with Hongfa.

5. 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 100mm², otherwise the terminal parts may have abnormal heating.

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

7. Cautions of mounting for relay body:

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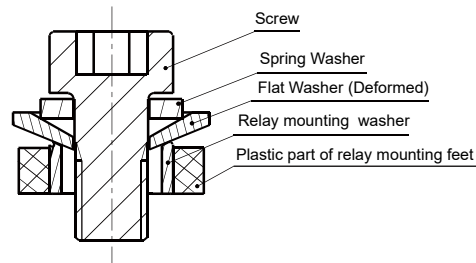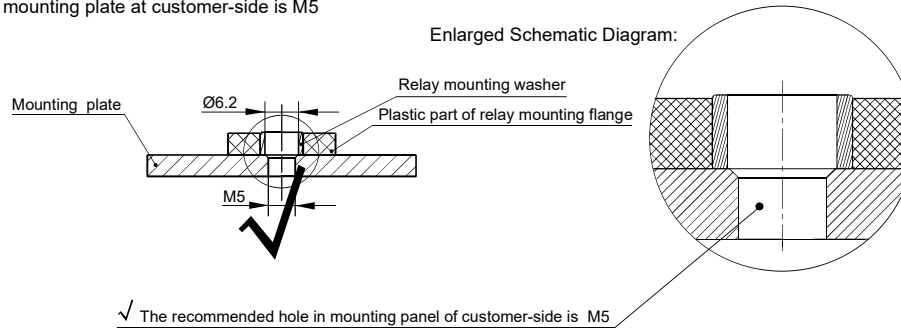The hole of mounting plate at customer-side is too large.

Enlarged Schematic Diagram:

Mounting plate — Ø6.2 — 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 — Ø6.2 — 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

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.