

HFE18V-300

HIGH VOLTAGE 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 (1000VDC), and dielectric strength between the coil and contacts is 4KV, which meets the requirements of IEC 60664-1.
- Coil with energy-saving devices.

CONTACT DATA

Contact arrangement	1H		
Contact resistance	≤0.2mΩ (300A)		
Rated load current	300A		
Mechanical endurance	2 x 10 ⁵ ops		
Outline Dimensions	113.6 x 65.1 x 77.4 mm		
	450V type	750V type	
Max. switching voltage	750V	900V	
Max. breaking current	3000A (360V, 1op min.)	2500A (600V, 1op min.)	
Max. switching power	135kW	225kW	
Electrical endurance ¹⁾	Cap. load	Making: 2.5 x 10 ⁴ ops (22.5Vd.c., τ=1ms Inrush 400A, Steady 300A)	Making: 1.5 x 10 ⁴ ops (37.5Vd.c., τ=1ms Inrush 400A, Steady 300A)
		Making: 1op (360Vd.c., τ=1ms Inrush 1350A, Steady 300A)	
	Res. load	Breaking: 1 x 10 ⁴ ops (450Vd.c., 80A)	Breaking: 1 x 10 ⁴ ops (750Vd.c., 80A)
		Switching: 3 x 10 ³ ops (450Vd.c., 300A)	Switching: 1 x 10 ³ ops (750Vd.c., 300A)
Current carrying capacity ²⁾	300A: Cont. 450A: 60min 600A: 20min 1200A: 30s 3000A: 0.6s		

Notes: 1) Until special statement, the temperature of electrical endurance is at 23°C and the on-off ratio is 0.6s:5.4s.
2) Ambient temperature is room temperature and cross section area of wire is 100mm² min. See Pic Endurance Capacity Curve for more information.

COIL

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Coil power W
12	9	1	Switch on:45 (time:0.2s) Carrying:3.8
24	18	2	Switch on:45 (time:0.2s) Carrying:3.8

Notes: The values above are conservative values within the temperature range(-40°C to 85°C), the pulling in voltage and releasing voltage are showed in the Pic Pulling in / Release Voltage Change Curve.

CHARACTERISTICS

Insulation resistance	1000MΩ (at 1000VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min.
	Between open contacts	3000VAC 1min.
Operate time (at nomi. volt.)	30ms max.	
Release time (at nomi. volt.)	10ms max.	
Shock resistance	Functional	196m/s ²
	Destructive	490m/s ²
Vibration resistance	10Hz to 500Hz 49m/s ²	
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 85°C	
Termination	M8 screw thread	
Unit weight	Approx.850g	

Notes: The data shown above are initial values.



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2016 Rev. 1.00

ORDERING INFORMATION

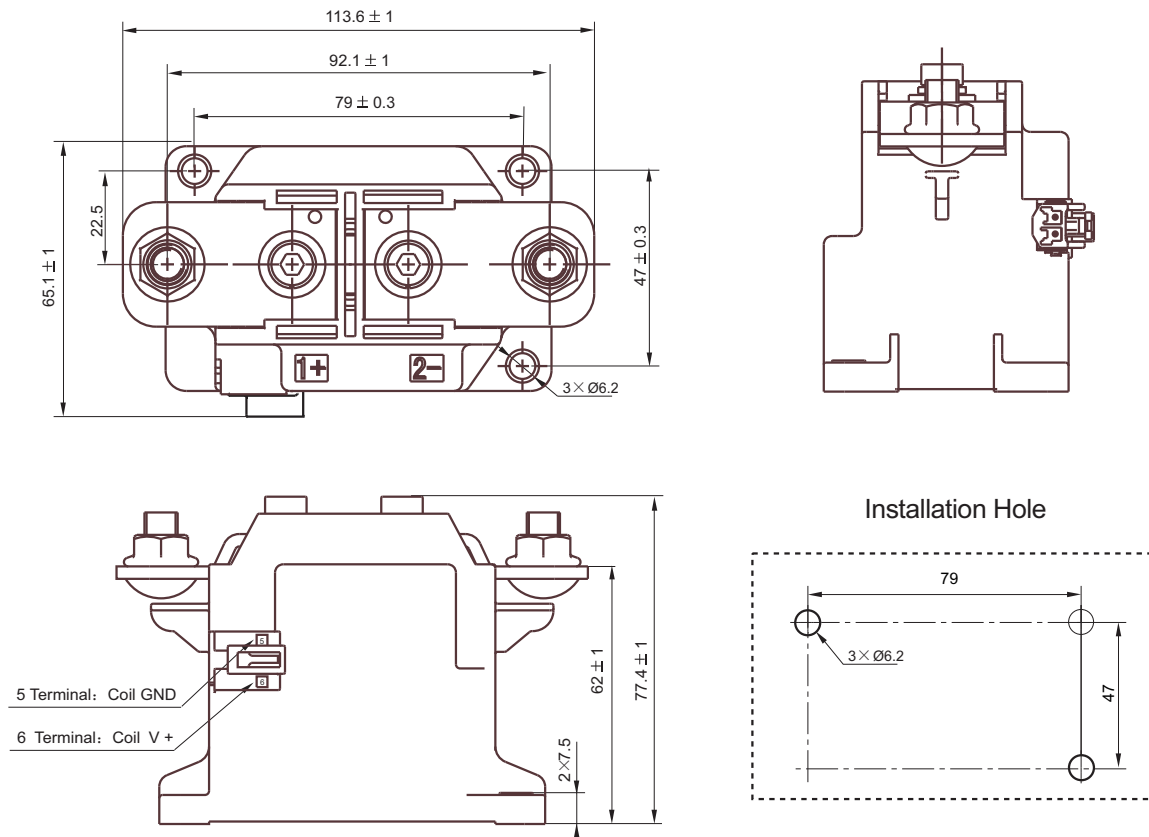
Type	HFE18V V: Vehicle	-300 / 750-	12-	H	C	6	(XXX)
Contact rating	300: 300A						
Load voltage	750: 750VDC Nil: 450 VDC						
Coil voltage	12: 12VDC 24: 24 VDC						
Contact arrangement	H:1 Form A						
Coil input terminal	C: connector						
Load input terminal	6:Cu-Bus-Bar terminal						
Special code ¹⁾	XXX: Customer special requirement Nil: Standard						

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

OUTLINE DIMENSIONS,INSTALLATION HOLE,COIL WRING DIAGRAM

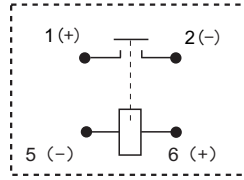
Unit: mm

Outline Dimensions



Remark: In case of no tolerance shown in outline dimension: outline dimension ≤ 10 mm, tolerance should be ± 0.3 mm; outline dimension > 10 mm and ≤ 50 mm, tolerance should be ± 0.5 mm; outline dimension > 50 mm, tolerance should be ± 0.8 mm.

Coil Wring Diagram

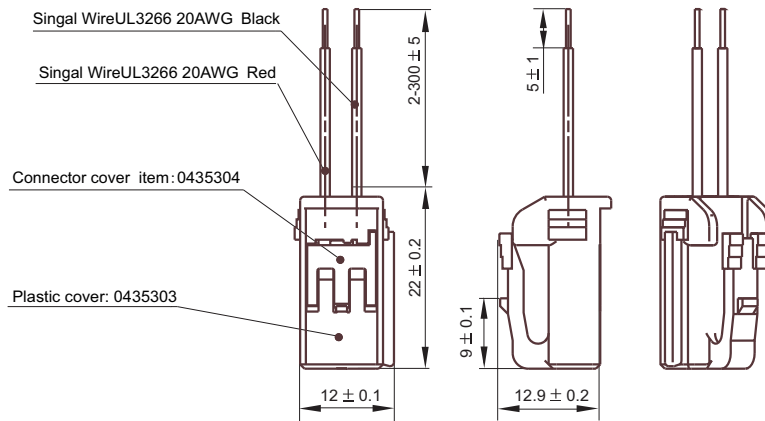


note: polarity option on the loads;
no polarity on coil.

Wring Diagram

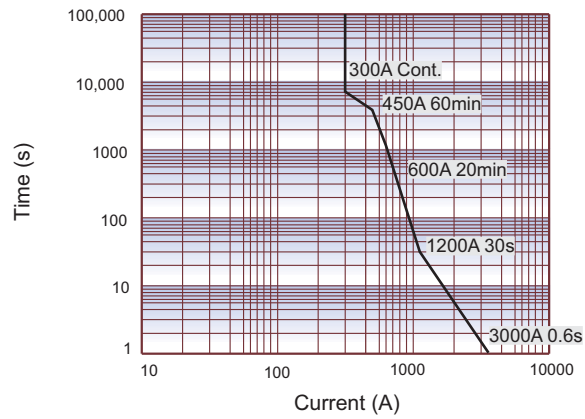
C: Connector

(Tianhai: 0435308 or Yazaki: 7283-1020)



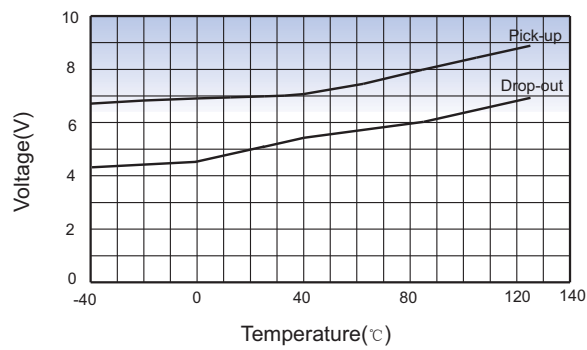
CHARACTERISTIC CURVES

Endurance Capacity Curve



Notes: The data above is measured at the environment temperature 85°C with cross section area of wire $\geq 100\text{mm}^2$. This data is only for reference and please do not use it for fuse selection.

Pick-up Voltage / Drop-out Voltage Curve



Notes: When the coil voltage is at 12V, the data above is taken as sample value and only for reference (Sample quantity: n=3)

Cautions

单位: mm

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

2. Please do not adhere foreign materials like oil on the terminals and please use the wire with cross section area 100mm^2 min., otherwise the terminal parts may have abnormal heating.

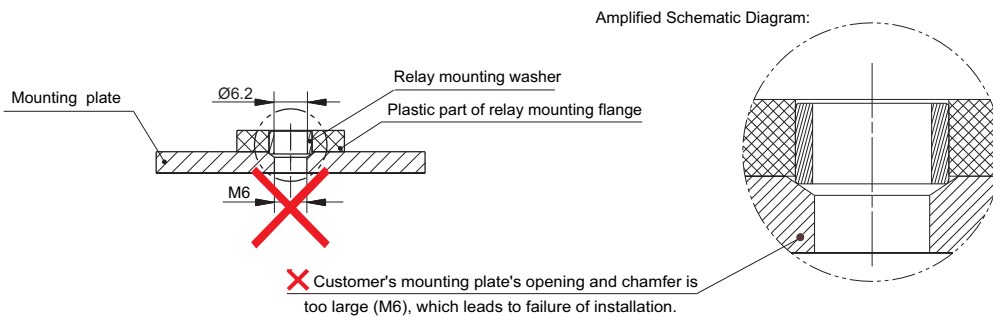
3. The product has energy-saving board inside and the coil will switch automatically after 0.1~0.2s drive, but repeated switching within 0.2s may cause failure of relay.

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 Installatio:

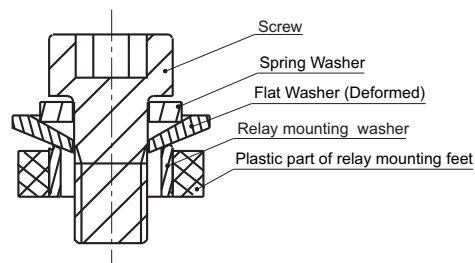
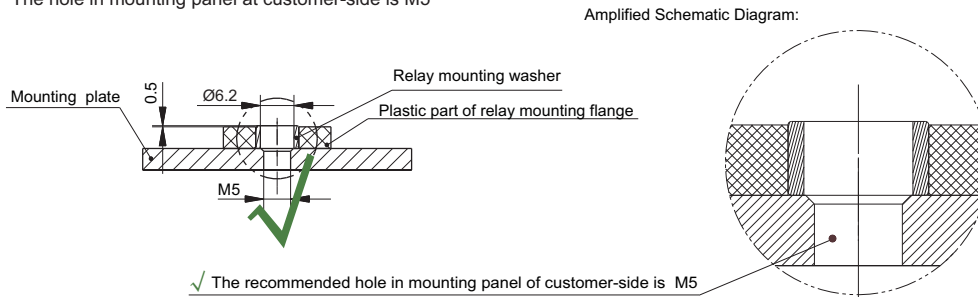
Unrecommended method

The hole of mounting panel at customer-side is too large.



Recommended method

The hole in mounting panel at customer-side is M5



When use M5 screw, the thickness and strength of the washer needs to be guaranteed or it may stand deformation 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.