

HFE 18V-150

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 150A 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.

CONTACT DATA

Contact arrangement	1H		
Contact resistance	≤1.5mΩ (6VDC 20A)		
Rated load current	150A		
Mechanical endurance	2 x 10 ⁵ ops		
Outline Dimensions	77.8 x 48.8 x 83.4 mm(Vertical)		
	89.7 x 41.5 x 83.6 mm(Horizontal)		
Max. switching voltage	450V type	750V type	
	750V	750V	
Max. breaking current	1500A (300V, 1op min.)	1500A (300V, 1op min.)	
	67.5kW	112.5kW	
Electrical endurance ¹⁾	Cap. load	Switching: 2.5 x 10 ⁴ ops (22.5Vd.c., τ=1ms Inrush 400A, Steady 150A)	Switching: 2.5 x 10 ⁴ ops (37.5Vd.c., τ=1ms Inrush 400A, Steady 150A)
		Making: 1次 (450Vd.c., τ=1ms Inrush 1350A, Steady 150A)	
	Res. load	Breaking: 1 x 10 ⁴ ops (450Vd.c., 60A)	Breaking: 6 x 10 ³ ops (750Vd.c., 60A)
		Switching: 3 x 10 ³ ops (450Vd.c., 150A)	Switching: 1 x 10 ³ ops (750Vd.c., 150A)
Current carrying capacity ²⁾	150A: Cont. 180A: 2h 300A: 10min 600A: 2min 900A: 30s		

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 50mm² 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	6
24	18	2	6

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		M5 screw thread
Unit weight		Approx.450g

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

HFE18V		-150 / 750-	12-	H	C	6	Y	(XXX)
Type	V: New energy vehicle							
Contact rating	150: 150A							
Load voltage	750: 750VDC Nil: 450 VDC							
Coil voltage	12:12VDC 24:24 VDC 48:48 VDC							
Contact arrangement	H: 1 Form A							
Coil input terminal	C: Connector							
Load input terminal	6: Cu-Bus-Bar Terminal							
Mounting	Nil: Vertical mounting Y: Horizontal mounting							
Special code¹⁾	XXX: Customer special requirement Nil: Standard							

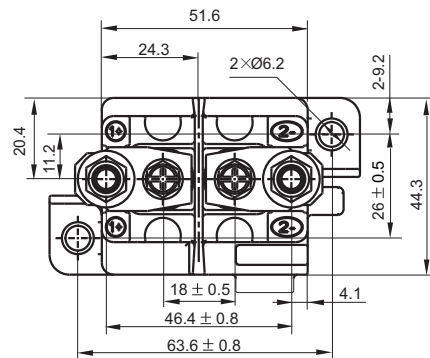
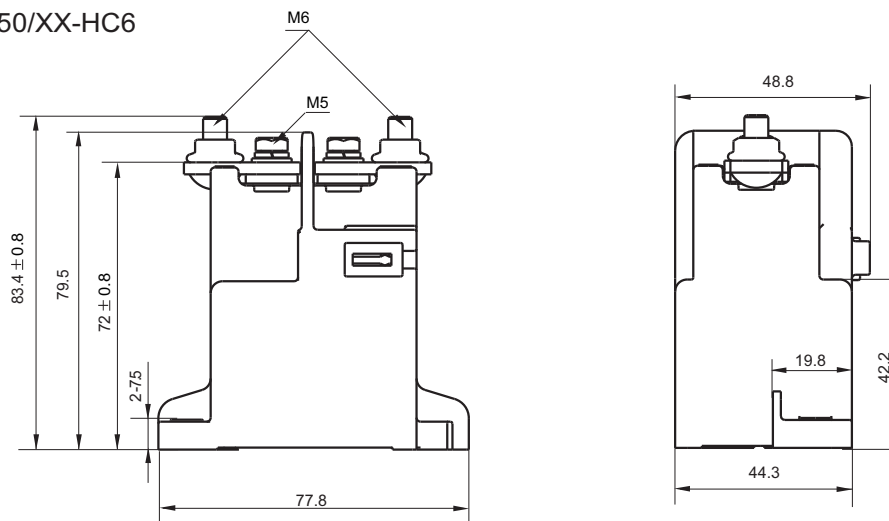
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, INSTALLATION HOLE

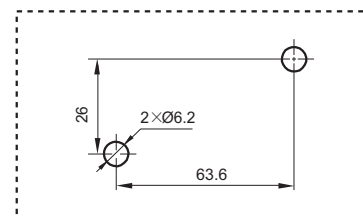
Unit: mm

Outline Dimensions

HFE18V-150/XX-HC6



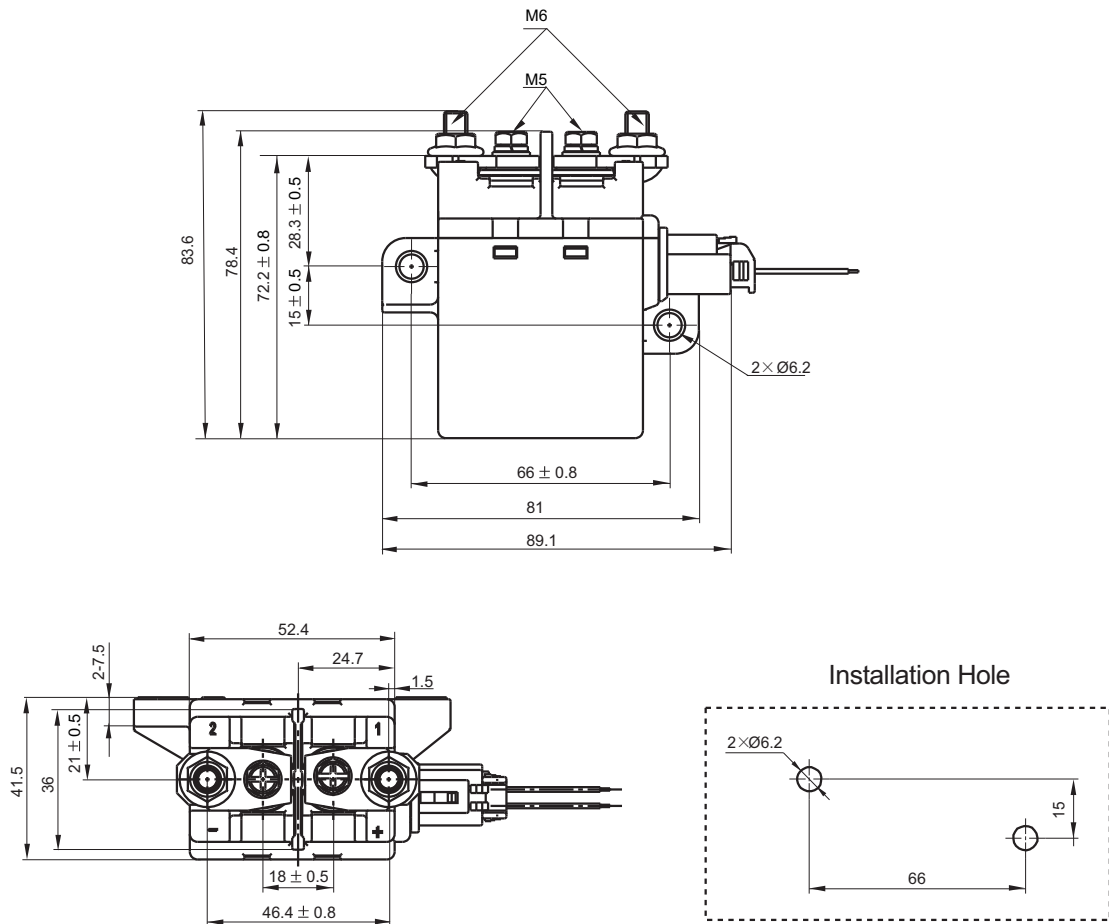
Installation Hole



OUTLINE DIMENSIONS,INSTALLATION HOLE

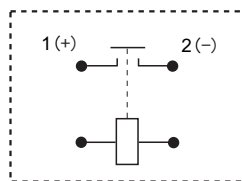
Outline Dimensions

HFE18V-150/XX-HC6Y



Remark: In case of no tolerance shown in outline dimension: outline dimension $\leq 10\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 10\text{mm}$ and $\leq 50\text{mm}$, tolerance should be $\pm 0.5\text{mm}$; outline dimension $> 50\text{mm}$, tolerance should be $\pm 0.8\text{mm}$.

Coil Wring Diagram



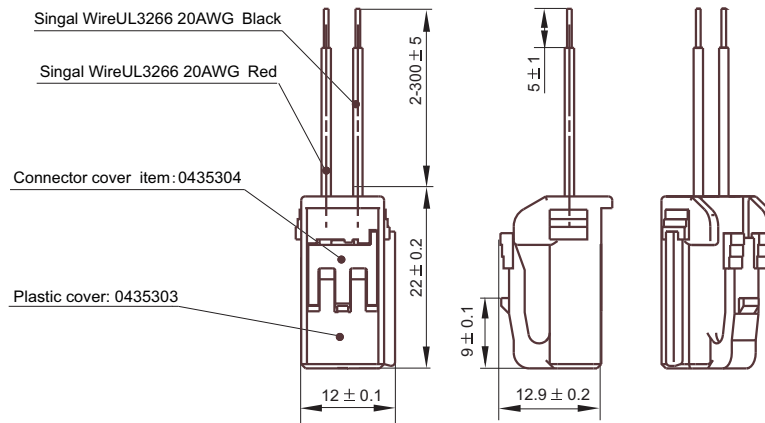
note: polarity option on the loads;
no polarity on coil.

OUTLINE DIMENSIONS, INSTALLATION HOLE

Wiring Diagram

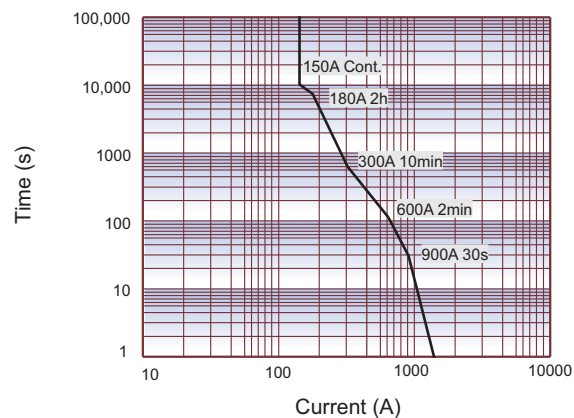
C: Connector

(Tianhai: 0435308 or Yazaki: 7283-1020)



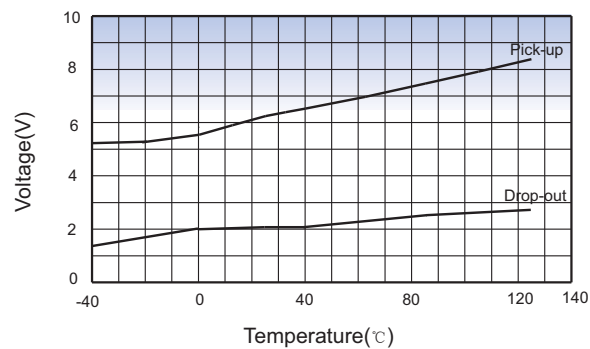
CHARACTERISTIC CURVES

Endurance Capacity Curve



Notes: The data above is measured at the environment temperature 85°C with cross section area of wire $\geq 50\text{mm}^2$. 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

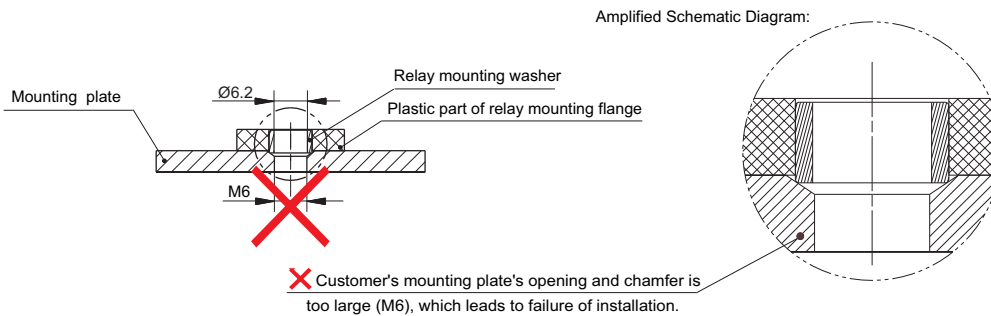
1. In case of loosening, please use washer when install the relay with M5 screw, and the torque within 3N·m to 4N·m, the torque of fixing screw at terminals shall be within 6N·m to 8N·m. The torque beyond the range may cause damage.

2. Please do not adhere foreign materials like oil on the terminals and please use the wire with cross section area 50mm² min., otherwise the terminal parts may have abnormal heating.

3. Cautions of Relay Installatio:

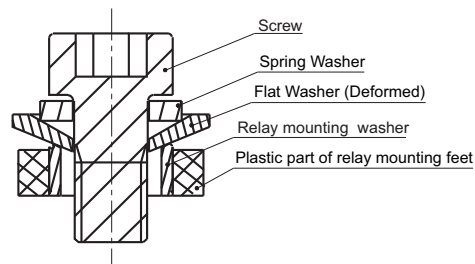
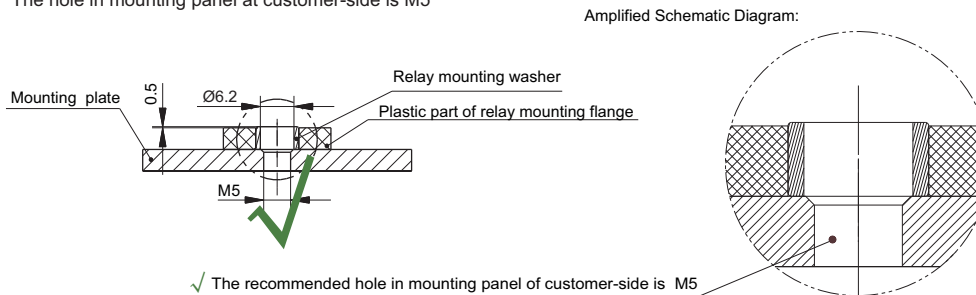
Unrecommended method

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.