HFE18V-100 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 100A 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 resistence		⩽1.5mΩ (6VDC 20A)	
Rated load current		100A	
Mechanical endurance		2×10^5 ops	
Outline Dimensions		77.6 x 40.0 x 72.6 mm	
		450V type	**750V type**
Max. switching voltage		750V	750V
Max. breaking current		1000A (360V, 1op min.)	1000A (600V, 1op min.)
Max. switching power		45kW	75kW
Electrical endurance[1]	Cap. load	Switching: 2.5×10^4 ops (22.5Vd.c., τ=1ms Inrush 400A, Steady 100A)	Switching: 2.5×10^4 ops (37.5Vd.c., τ=1ms Inrush 400A, Steady 100A)
		Making: 1 op (360Vd.c., τ=1ms Inrush 1350A, Steady 100A)	
	Res. load	Breaking: 1×10^4 ops (360Vd.c., 50A)	Breakhing: 6×10^3ops (600Vd.c., 50A)
		Switching: 3×10^3 ops (450Vd.c., 100A)	Switching: 1×10^3 ops (750Vd.c., 1000A)
Current carrying capacity[2]		100A: Cont. 120A: 2h 200A: 10min 400A: 2min 600A: 30s	

Notes: 1) Until special statement, the temperature of eletrical 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 40mm² 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	4.5
24	18	2	4.5

Notes: The values above are conservative values within the temperature rage(-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/s²
	Destructive	490m/s²
Vibration resistance		10Hz to 500Hz 49m/s²
Humidity		5% to 85% RH
Ambient temperature		-40°C to 85°C
Termination		M5 screw thread
Unit weight		Approx.400g

Notes: The data shown above are initial values.

ORDERING INFORMATION

HFE18V	-100 /	750-	12-	H	L	5	(XXX)

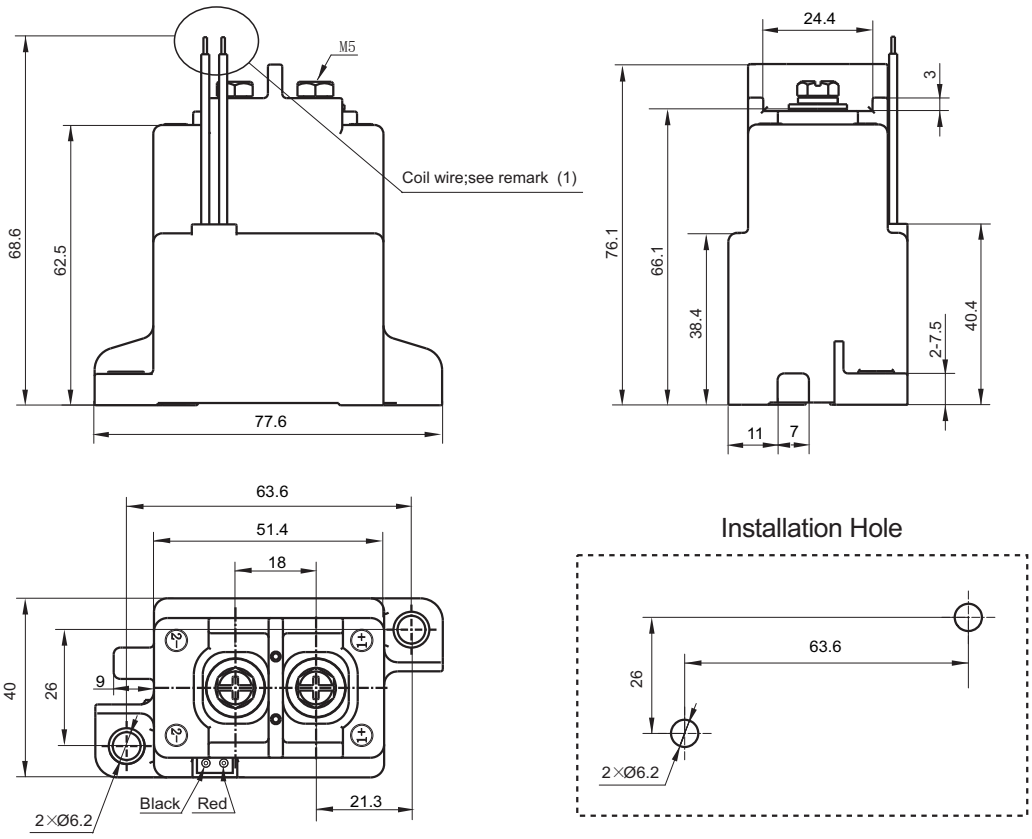
Type	**V:** New energy vehicle
Contact rating	**100:** 100A
Load voltage	**750:** 750VDC **Nil:** 450 VDC
Coil voltage	**12**:12VDC **24**: 24 VDC **48**: 48 VDC
Contact arrangement	**H:** 1 Form A
Coil input terminal	**L:** wire **B:** wire+connector
Load input terminal	**5:** Bolt Terminal Female
Special 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

Unit: mm

Outline Dimensions



Installation Hole

Remark:

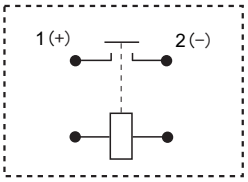
(1) Coil terminals have two kinds,wire and wire+connector.Standard length of wire is 100±8mm,special length available. The dimension of wire+connector can be found in next page.

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

OUTLINE DIMENSIONS,INSTALLATION HOLE

Unit: mm

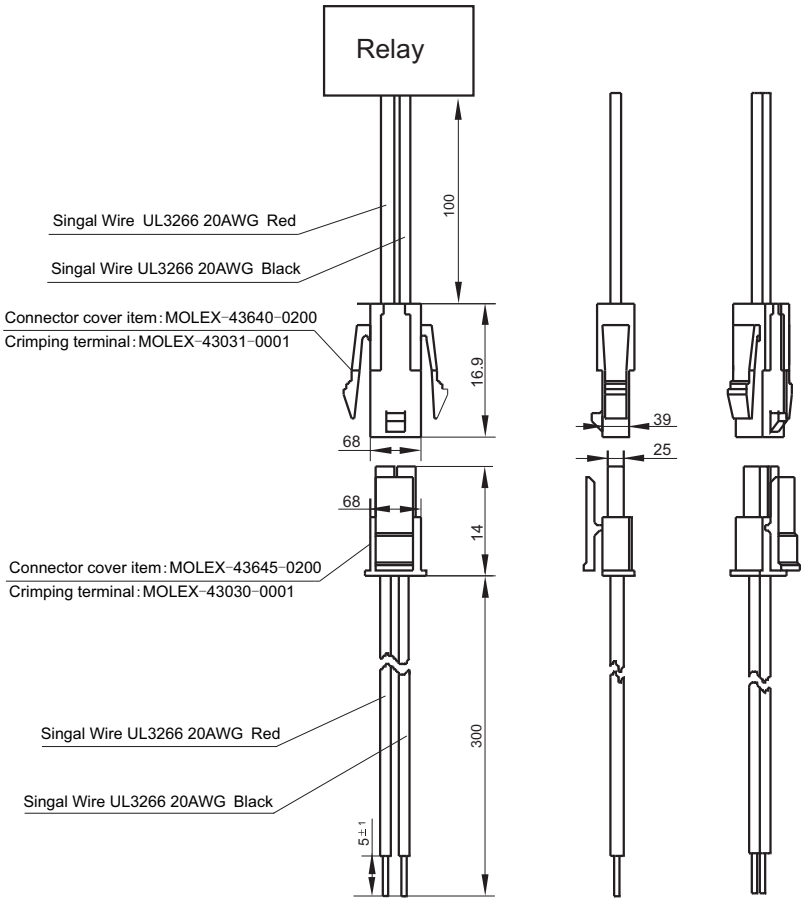
Coil Wring Diagram



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

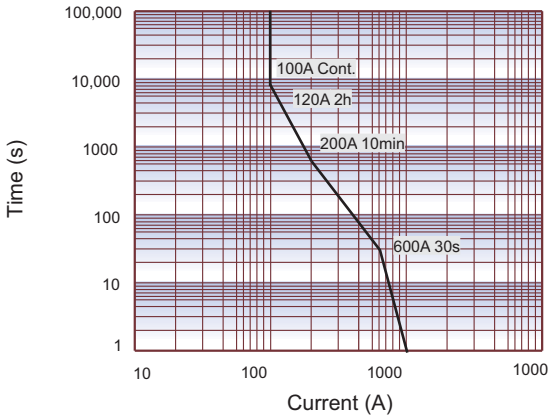
Wring Diagram

B:Wire+Connector



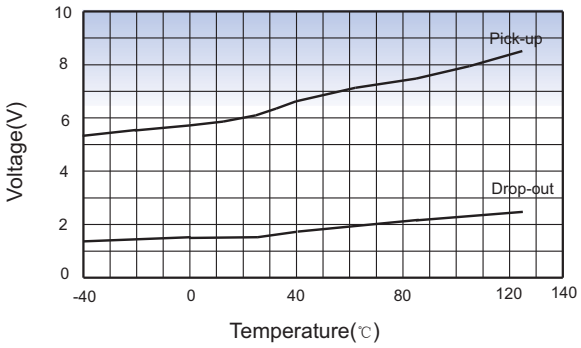
CHARACTERISTIC CURVES

Endurance Capacity Curve



Notes: The data above is measured at the environment temperature 85℃ with cross section area of wire ⩾40mm$^{2.}$ 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

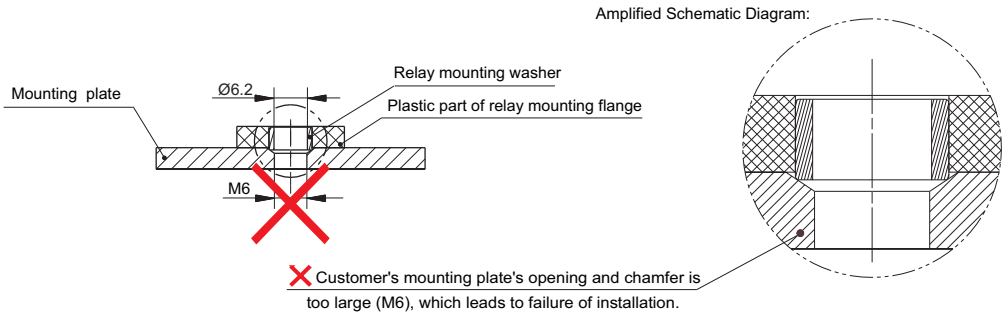
1. In case of loosening, please use washer when install the relay with M5 screw, and the torque within 3N·m to 4N·m, the torque of fixing screw at terminals shall be within 3N·m to 4N·m。The torque beyond the range may cause damage.。

2. Please do not adhere foreign materials like oil on the terminals and please use the wire with cross section area 40mm^2 min., otherwise the terminal parts may have abnormal heating.

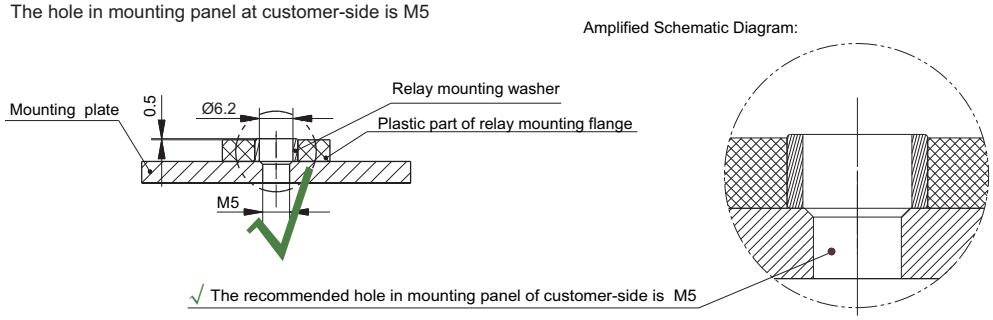
3. The thickness of copper bus-bar is recommended 1.5mm to 2mm, otherwise it may cause screwloose or can not guarantee a tight installation.

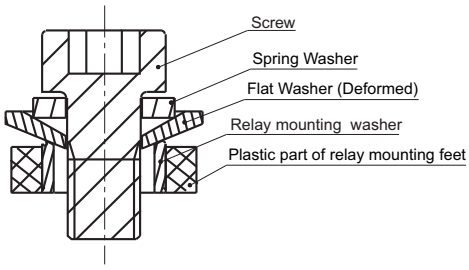
4. Cautions of Relay Installatio:

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.