

HFE82V-150F

DIRECT CURRENT RELAY



Features

- Hermetically sealed with ceramic brazing technology, without risk of arc leaking, no fire or explosion.
- Filled with hydrogen gas to prevent the oxidation and burnout of contacts; Low and stable contact resistance, with IP67 compliant.
- 150A continuous carry current capability at 85°C.
- Max. insulation resistance up to 1000MΩ (@1000 VDC), dielectric strength (coil-contact) up to 4kV, IEC 60664-1 compliant.

RoHS compliant

CONTACT DATA

Contact arrangement	1 Form A
Contact resistance ¹⁾	≤0.3mΩ(150A)
Contact rating	150A
Mechanical endurance	2x10 ⁵ ops
Max. switching voltage	750 VDC
Max. breaking current	1300A(400 VDC) 1 op
Max. switching power	150kW
Electrical endurance ²⁾	Breaking:5x10 ⁴ ops (475 VDC, 20A)
	Making:7x10 ⁴ ops(20 VDC, 100A)
	Breaking:1x10 ³ ops(450 VDC, 150A)
	Breaking:500 ops(750 VDC, 150A)
	Short circuit current 8kA/2ms,1 ops, no fire, no explosion
Current carrying ³⁾ capacity	150A: Cont.
	180A: 2h
	225A: 15min
	320A: 2min
	400A: 1min
	600A: 20s
	900A: 8s

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

2) Unless otherwise specified, the temperature of electrical 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 50mm² 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	4000 VAC 1min
	Between open contacts	3000 VAC 1min
Operate time (at rated volt.)		≤30ms
Release time (at rated volt.)		≤10ms
Shock resistance	Functional	196m/s ²
	Destructive	490m/s ²
Vibration resistance		10Hz ~ 500Hz 49m/s ²
Humidity		5% ~ 85% RH
Ambient temperature		-40°C ~ 85°C
Load terminal structure		Screw terminal female
Unit weight		Approx.285g
Outline Dimensions		82.5 x 39.5 x 69.6mm

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



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/EC 27001 CERTIFIED

2024 Rev.1.00

ORDERING INFORMATION

	HFE82	V	-150	F/	500-	12-	H-	C	5	Y	-1	(XXX)
Type												
Application	V: Vehicle											
Contact rating	150: 150A											
Series breakdown	F: F series											
Load voltage	500: 500 VDC 750: 750 VDC											
Coil voltage	12: 12 VDC 24: 24 VDC											
Contact arrangement	H: 1 Form A											
Coil terminal structure	C: Connector											
Load terminal structure	5: Screw terminal female											
Mounting	Y: Horizontal mounting											
Coil characteristic	1: Single coil											
Special code ¹⁾	XXX: Customer special requirement											

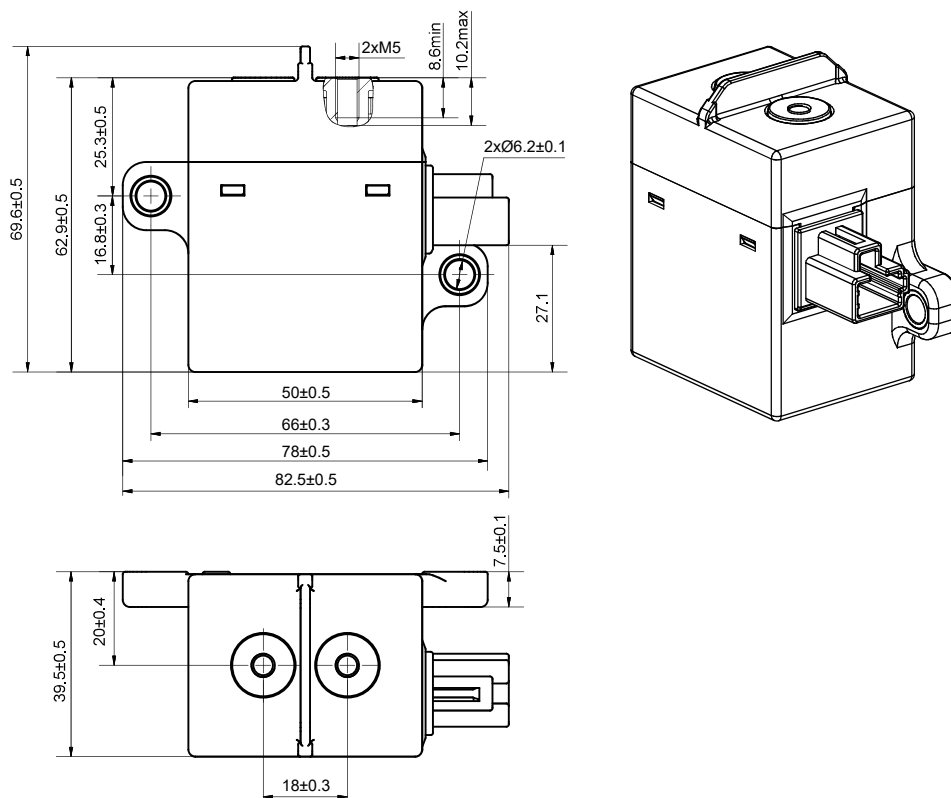
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

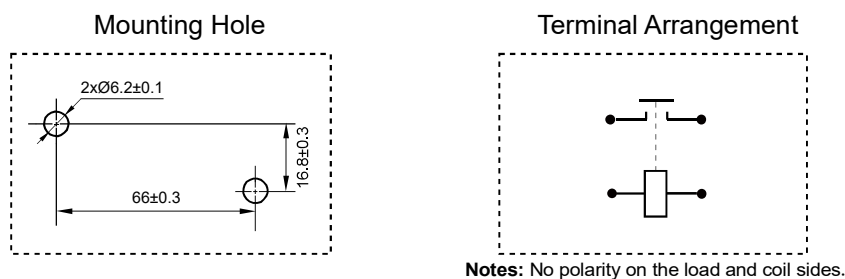
Outline Dimensions

HFE82V-150F/XXX-XX-H-C5Y-1



OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

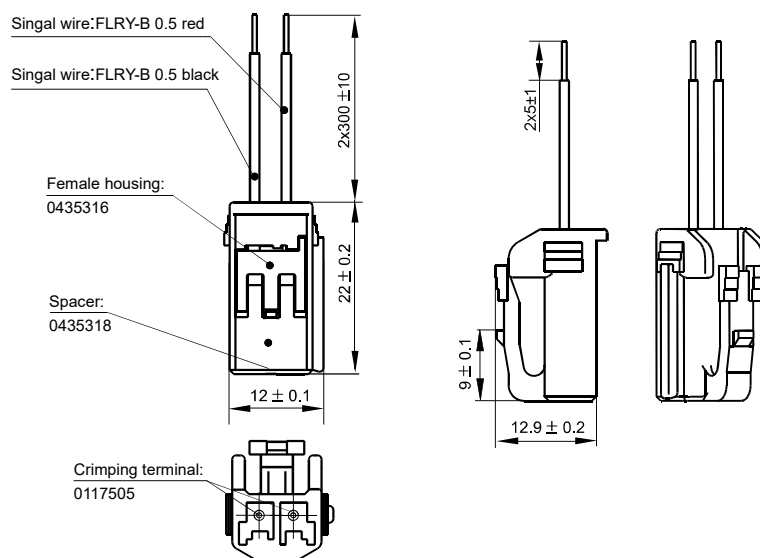


WIRING DIAGRAM

Unit: mm

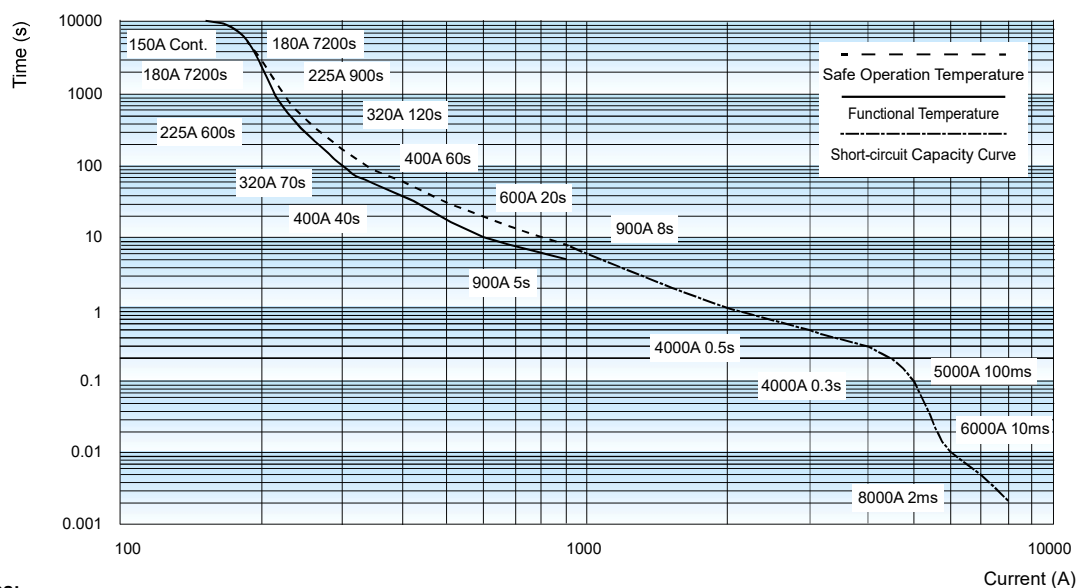
C:Connector

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



CHARACTERISTIC CURVES

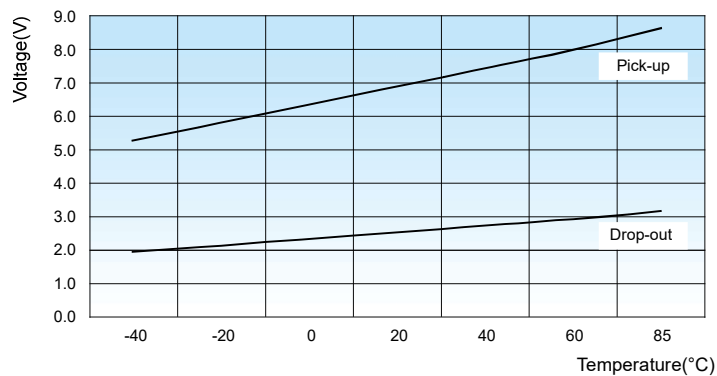
Endurance Capacity Curve



Notes:

- 1) The data is for design reference, it shall be verified as actual for model selection and fuse mating of short-circuit current test.
- 2) The upper temperature limit of safe operation and function are set for 180°C and 130°C respectively.
- 3) If the product needs to be operated for a long time, the upper temperature limit should not exceed 130°C.
- 4) The ambient temperature is 85°C, and the cross sectional area of the wire is $\geq 50\text{mm}^2$.
- 5) When the current is $\geq 1500\text{A}$, the relay is likely to weld without fire or explosion.
- 6) The dash-dotted line is the short-circuit capacity curve of the relay. when the current is $\geq 5000\text{A}$, the contact may bounce without fire or explosion.

Pick-up Voltage / Drop-out Voltage Curve



- Notes:**
- 1) The above values are sampling values for reference only;
 - 2) The rated voltage of the sample coil is 12VDC;
 - 3) The sampling ambient temperature is -40°C ~ 85°C.

CAUTIONS

1. In case of looseness, please use washer when install the relay with M5 screw, and the torque within 3N·m to 4N·m. The torque beyond the range may cause damage.

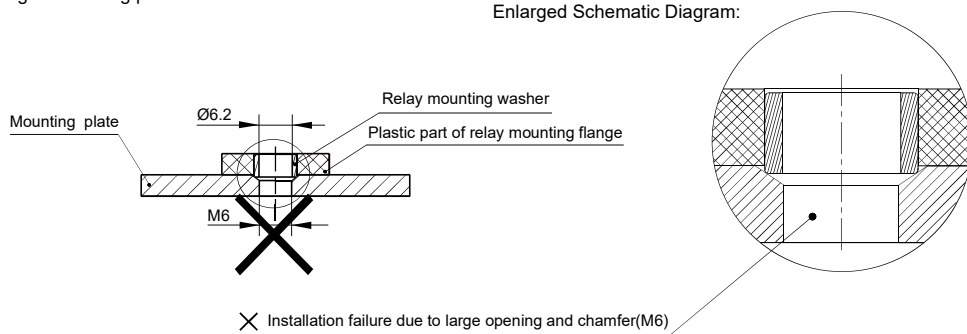
Mounting for load terminal				Mounting for relay body	
Mounting way	Torque requirement	Hole dia. of copper bus bar	Thickness of copper bus bar	Mounting way	Torque requirement
M5 Screw	3N·m ~ 4N·m	Ø5.0mm ~ Ø5.5mm	2mm ~ 3mm	M5 Screw	3N·m ~ 4N·m

2. Please tighten the load terminal of relay vertically with preloading first when installing. Repeat locking is not recommended.
3. If any special screws and nuts, such as nylok, are used when installing, it is recommended to contact and confirm with Hongfa.
4. If any special installation requirements, such as downward direction, multi busbar connection, are involved, it is recommended to contact and confirm with Hongfa.
5. Please avoid adhering to foreign matter such as grease on the terminal lead end and please use the conductor with min. cross section area of 50mm², otherwise it may cause the abnormal heating of the terminal part.
6. Cautions of mounting for relay body:

Unrecommended method

Large opening of mounting plate at customer-side.

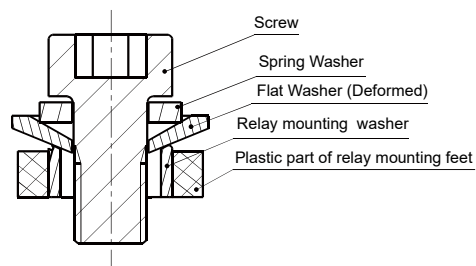
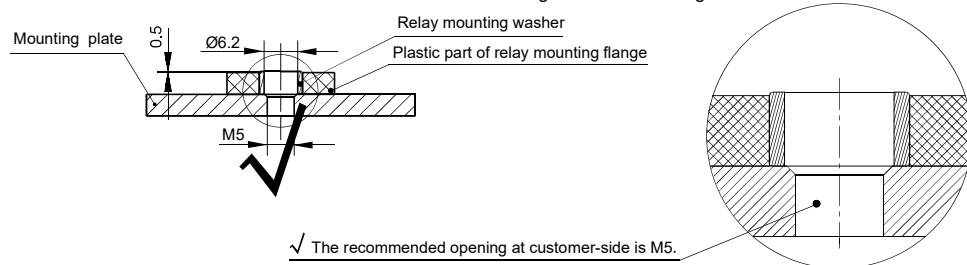
Enlarged Schematic Diagram:



Recommended method

Appropriate opening (M5) of mounting plate at customer-side.

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.

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