HFZ16V-100-E EPOXY SEALED NON-POLAR SERIES DC RELAYS

c UL us
File No.:20151202-E133481

CQC
File No.:2016010304857640

Features

- Rated 100A switching capability
- No polarity on the load and the coil
- The relay has epoxy resin encapsulation and sealing structure, which can work in explosive or hazardous environment, coils and contacts do not oxidize and contaminate the enviroment.
- Pre-charging and other applications
- Small size,light weight

RoHS compliant

CONTACT DATA

Contact arrangement	1SH
Contact resistance	30mΩ max.(typ. 0.5m)(6VDC,20A)
Nominal current	100A
Rated load voltage	12VDC to 900VDC
Max. breakin current	1000A 320VDC(more than 1 time)
Max.switching power	320kW
Min. load	1A 12VDC
Standard continuous charged current	100A($35mm^2$)
Short time overload current	150A 15min ($35mm^2$) 200A 3min ($35mm^2$) 300A 30s ($35mm^2$)
Mechanical endurance	$1x10^6$OPS
Electrical endurance	1 x 10^4OPS(100A 450VDC, Resistive load, 23℃, 1s on 9s off)

CHARACTERISTICS

Insulation resistance	Between open contacts	1000MΩ (1000VDC)	
	Between contact and coil	1000MΩ (1000VDC)	
Dielectric strength	Between open contacts	2200Vrms	
	Between coil & contacts	2200Vrms	
Nominal voltage (VDC)		12	24
Operate time (ms)		≤30	≤30
Release time (ms)		≤10	≤10
Bounce time(ms)		≤5	≤5
Shock resistance		196 m/s^2	
Vibration resistance		10Hz to 500Hz 98m/s^2	
Ambient temperature		-40℃ to 85℃	
Humidity		5% to 95%RH	
Protection grade		IP67	
Termination		The M5 internal thread	
Outline dimensions		54x40.3x58.3 53.3x41.1x58	
Weight		220g	

Notes: 1) The above values are the initial values at room temperature.
2) The test result can not meet the requirements of voltage resistance and insulation resistance.

COIL DATA

Nominal voltage (VDC)	12	24
Operating voltage (VDC)	9~16	18~32
Max. voltage (VDC)	16	32
Pick-up voltage (VDC)	≤9	≤18
Drop-out voltage (VDC)	≥1	≥2
Coil resistance x (1±7%)	26	96
Min. starting current (A)	0.46	0.25
Transient surge current (A)	--	--
Average holding current (A)	0.46	0.25
Steady-state power vonsumption (W)	Approx. 5.5	Approx. 6

Notes: Other rated voltages can be specially ordered.

ORDERING INFORMATION

	HFZ16	□	-100/	900-	12-	SH	S	L	5	Y	E	-1	(XXX)
Type													
Application	**Nil:** New energy power control **V :** Vehicle												
Version	**100**：100A												
Nominal voltage	**900**：12~900VDC												
Coil voltage	**12**：12VDC **24**：24VDC												
Contact arrangement	**SH:** 1 FormA(double-contact of 1 Form A)												
Contact material	**S:** Silver plated												
Coil terminal	**L:** Lead wire **B:** Lead wire with connector												
Load terminal	**5:** Internal thread mounting												
Installation method	**Nil**：Vertical **Y**：Horizontal												
Appearance and structure	**E:** Simplified shell structure												
Sort	**1:** 1 coil												
Special code[1)]	**XXX:** Customer special requirement												

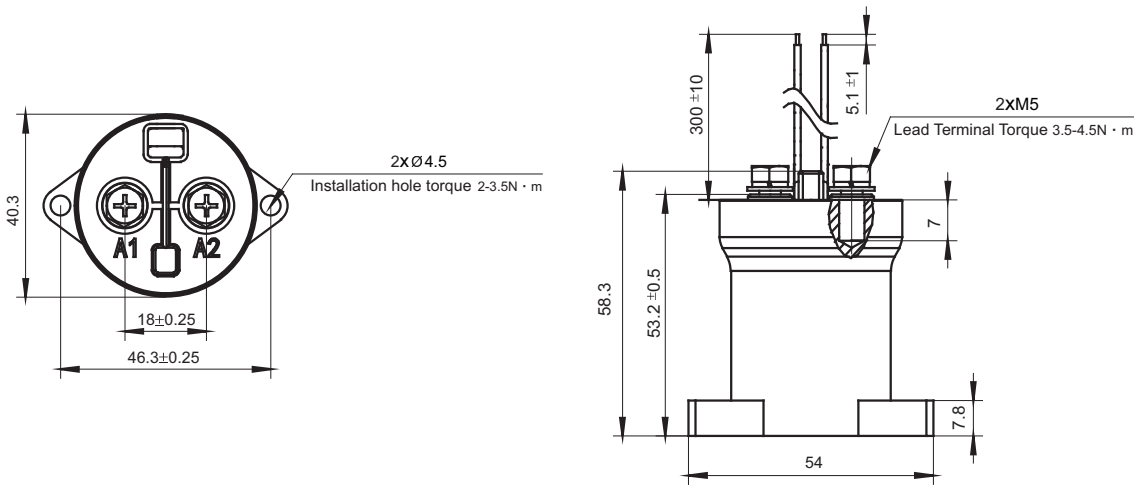
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions

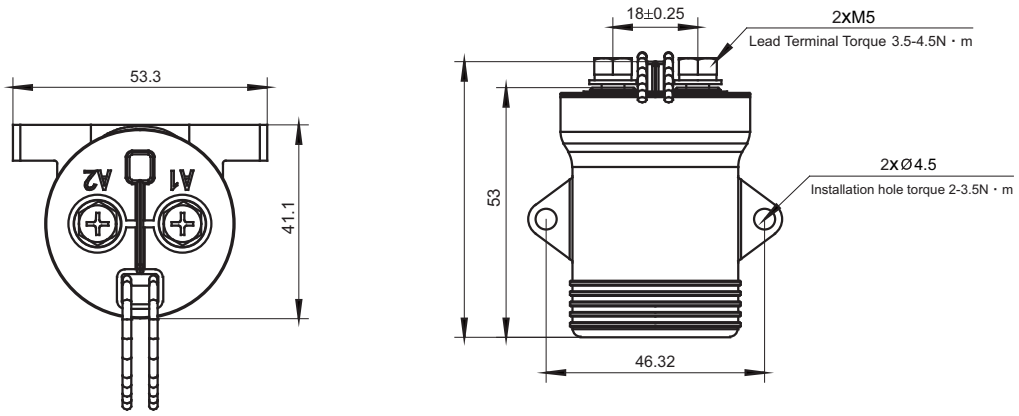
Vertical



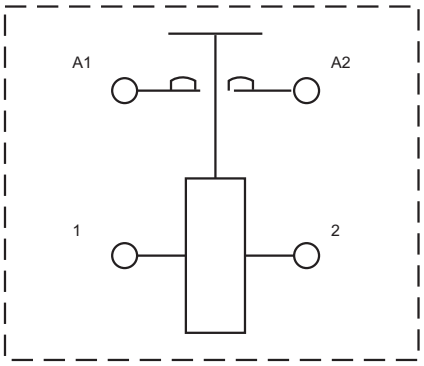
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Horizontal



PCB Layout (Bottom view)



A1, A2 are the load terminals;1 and 2 are the coil terminals; no polarity on the load terminal and the coil terminal .

Notes: 1) Dimension tolerance is not indicated for part of the overall dimension of the product. When the overall dimension is less than or equal to 10 mm, the tolerance is ±0.3 mm; When the overall dimension is between (10 ~ 50) mm, the tolerance is ±0.5mm; When the overall dimension is greater than or equal to 50 mm, the tolerance is ± 0.8 mm.

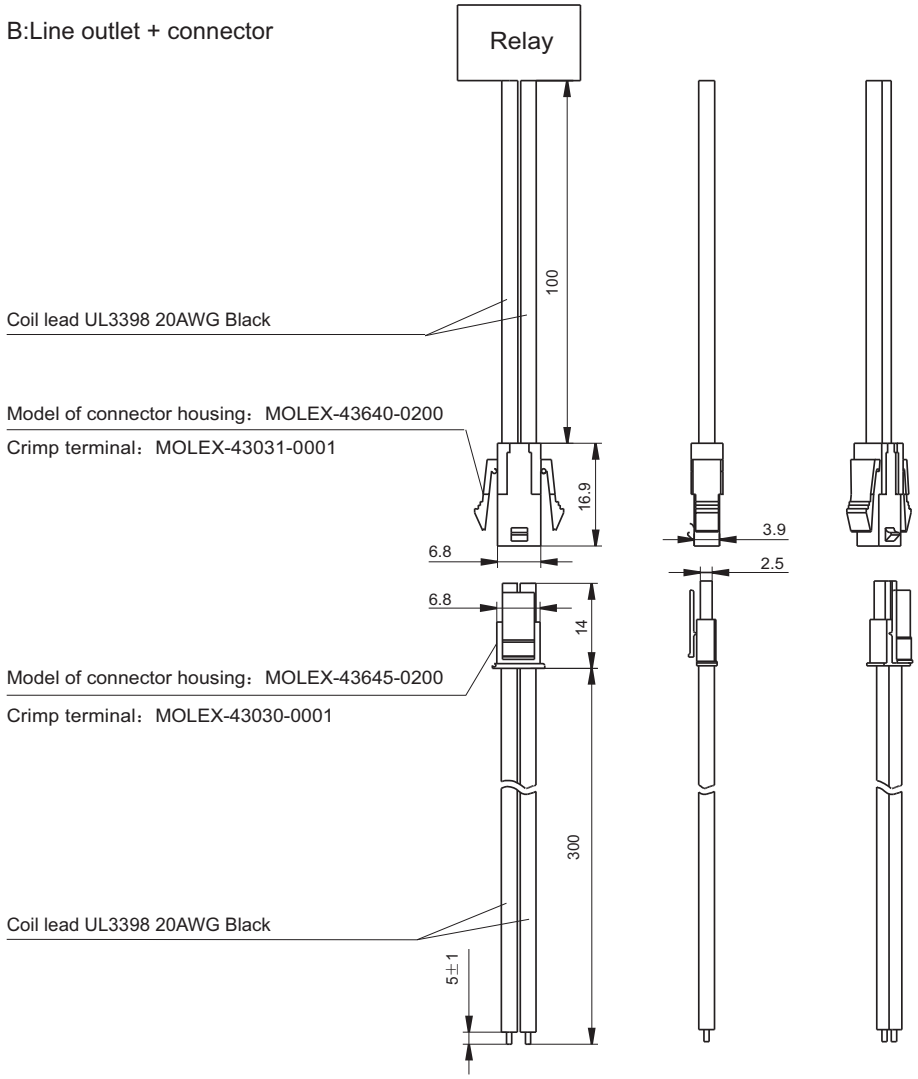
2) L: Coil lead specifications:UL3398,20AWG,black;Line length 300mm.

3) B:Line outlet + connector (See Figure).

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

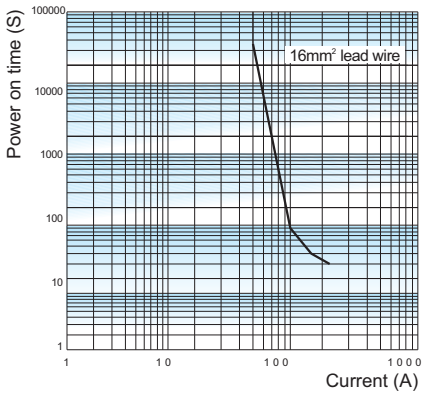
Unit: mm

B:Line outlet + connector



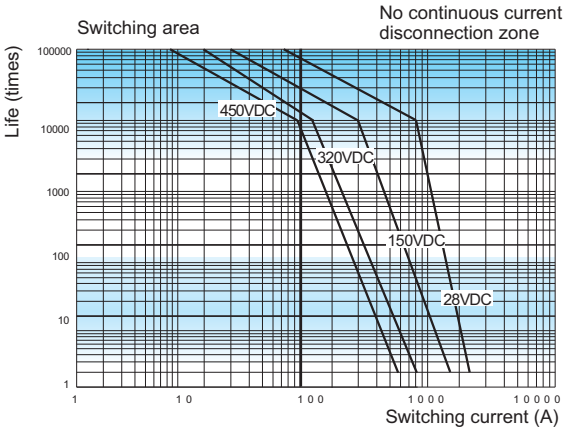
CHARACTERISTIC CURVES

Current carrying capacity



Notes: The above data are measured at room temperature for your reference only. Do not use it to select a fuse directly.

Load switching capability

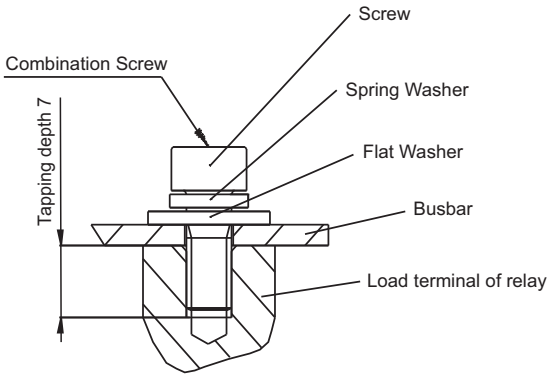


Notes: Resistive load
Insulation after electrical life test ⩾50MΩ (500VDC)
As the lifetime is related to many factors,
it is recommended to verify the ratings according to the actual application.

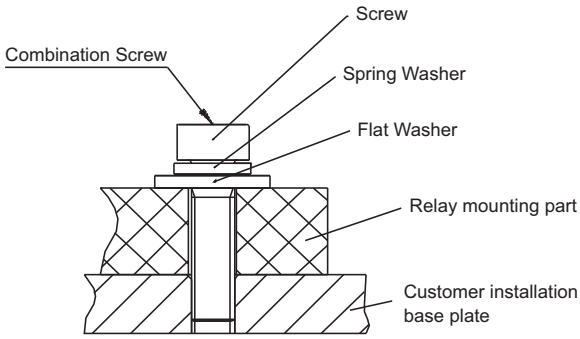
Precautions for use

1. In order to suppress the relay coil reverse electromotive force, suggest to connect the coil with nonlinear resistor parallelly (variable resistance is recommended to use, maximum energy tolerance > 1 j, voltage in 1.5-2 times of the rated voltage, if use diode, the release time will greatly lengthen and degrade the cutting performance. (Energy-saving products have built-in suppression reverse electromotive force circuit, surge suppression devices are not required)
2. The rated values of contact parameters are tested under resistive load. In the case of inductive load with L/R > 1ms, please connect inrush pcurrent rotection devices for this load. If no measures are taken, electrical durability may decrease and on-off failure may occur. Please leave enough space when design.
3. As a HVDC switching device, it may fail at high temperature when the lifetime and load capacity exceed parameters specified in the manual. The protective circuit which can cut off the load in case of emergency shall be adopted. As a product with limited life, it should be replaced in time to ensure safety.
4. Please avoid grease and other foreign bodies on the terminal, and use connecting wires of 35mm^2 or above; When installing the load terminal, ensure that the power cable is close to the lead terminal. Install and tighten it in the sequence of flat washer, spring washer and nut, or directly use the self-locking nut. Contamination of the lead terminal or incorrect connection sequence can cause severe overheating and melting of the insulation of the connection cable.
5. Please use washers to prevent looseness during installation. Please control the locking torque within the recommended range. If it exceeds the range, it may cause damage to the shell. When using screws, make sure the gasket is thick and strong enough, otherwise it will deform and burst the casing.

Load wire installation



Relay installation



Notes: Tapping depth of load internal M5 is 7mm.