



尼普顿电器  
Neptune Electric

# HVDC Relay NVR6V-200Y-F



Ceramic  
Series

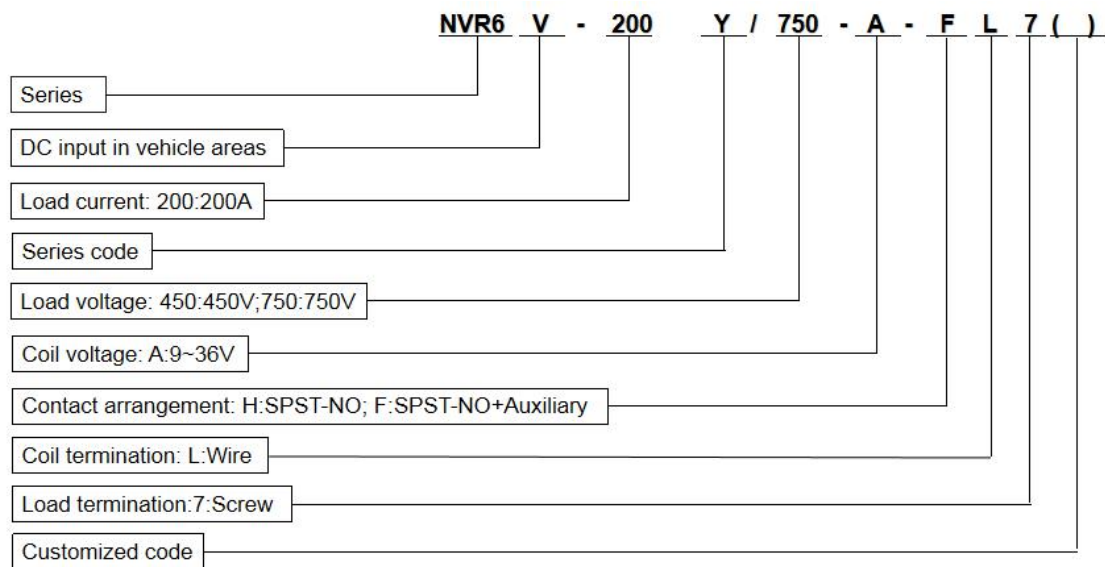
## Features

- CCC, CE and RoHS compliant;
- Contacts sealed in ceramic capsules and inert gas;
- Contacts protected against contamination. e.g oxidation and corrosion;
- Magnet arc blowout;
- Coils controlled by PWM (Pulse Width Modulation) to ensure low operation power;
- Auxiliary contact option;

## Applications

- ◆ Main contactors for larger hybrid electric vehicles(HEV), plug-in hybrids(PHEV) and full electric vehicles(BEV);
- ◆ Battery charging systems;
- ◆ Power charging devices;
- ◆ Solar power systems;
- ◆ Could server and uninterrupted power supply (UPS)

## Product Code Structure



## Coil Data

Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Rated operating power W
9~36V	≤9	≥3	45W(Initial) 4.0W(Holding)

- 1) Operate voltage and release voltage may vary with environmental temperature.
- 2) The ripple factor should be under 5%.



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## Main Contact Data

Contact arrangement		1H
Initial contact resistance		$\leq 1.5\text{m}\Omega$ (6V DC/20A)
Rated current		200A
Limiting short-time current		400A:10min
		800A:10s
Max.switching current		1600A(320V DC)
Overload break		50 times (400A/450V DC)
Dielectric strength	Between contact and coil	3000V AC
	Between contacts	
Insulation resistance	Between contact and coil	Min: 1000M $\Omega$ (1kV DC)
	Between contacts	
Operate time		$\leq 40\text{ms}$
Bounce time		$< 5\text{ms}$
Release time		$\leq 25\text{ms}$

## Auxiliary Contact Data

Contact arrangement		SPST-N0
Min. load		DC5V 100mA
Insulation resistance		$> 100\text{M}\Omega$
Initial contact resistance		$< 30\text{M}\Omega$
Endurance	Mechanical	$1 \times 10^6$ times (60 times/min.)
	Electrical	$3 \times 10^4$ times (30 times/min.)



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### Other Data

Endurance	Mechanical		$2 \times 10^5$ times
	Electrical (Resistive load)	450V DC	$1 \times 10^4$ times
		750V DC	$6 \times 10^3$ times
Mechanical performance	Shock resistance (Functional)		20G
	Shock resistance (Destructive)		50G
	Vibration resistance (Functional)		20G (80~2000Hz)
	Vibration resistance (Destructive)		20G (80~2000Hz)
Operational condition	Ambient temperature		-40℃~+85℃
	Relative humidity		5%~85% R. H.
Weight			Approx. 460g



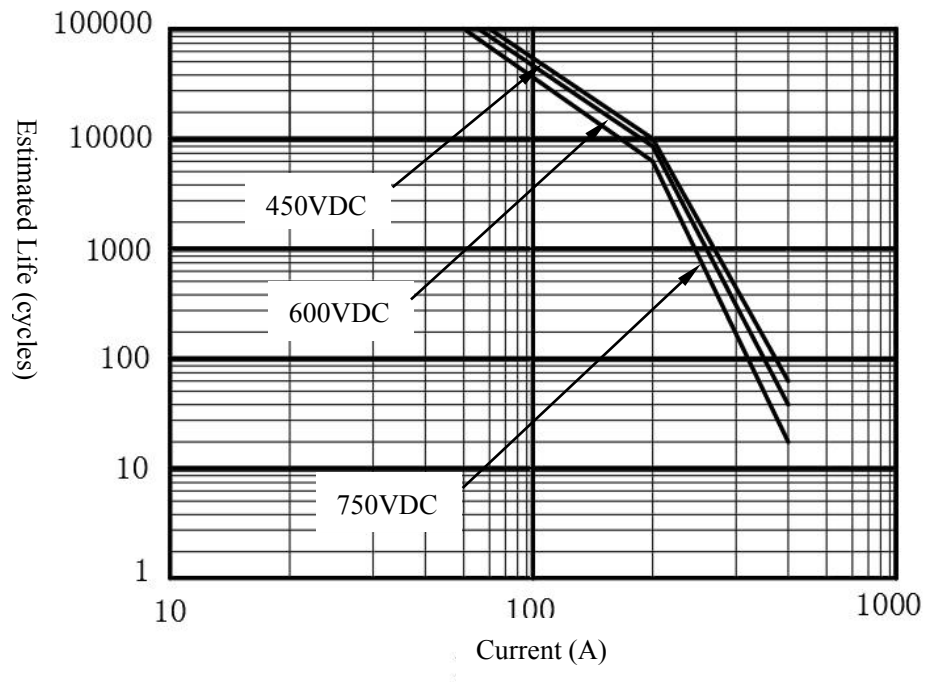
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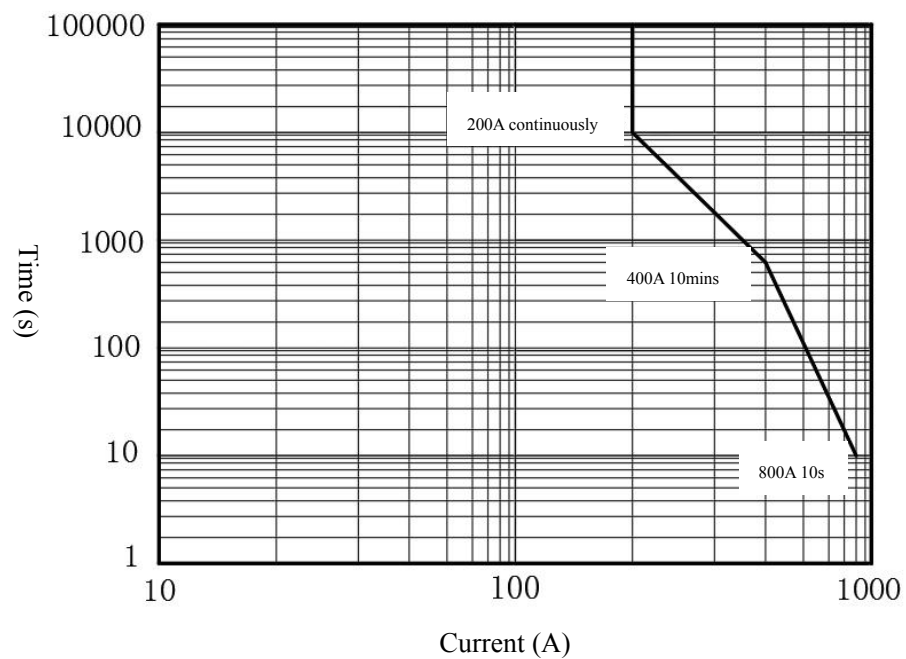


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### Estimated Life Diagram



### Contacts Current Capacity Diagram





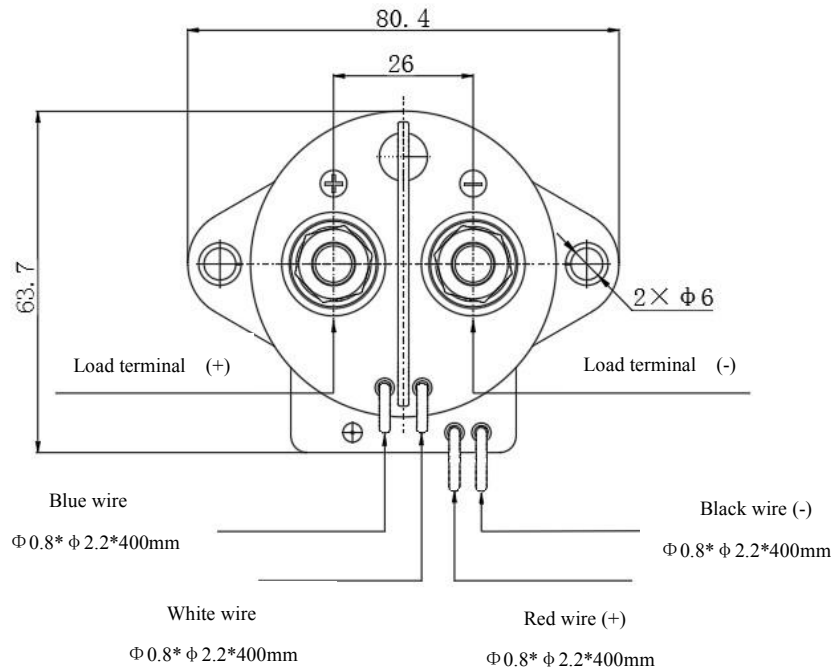
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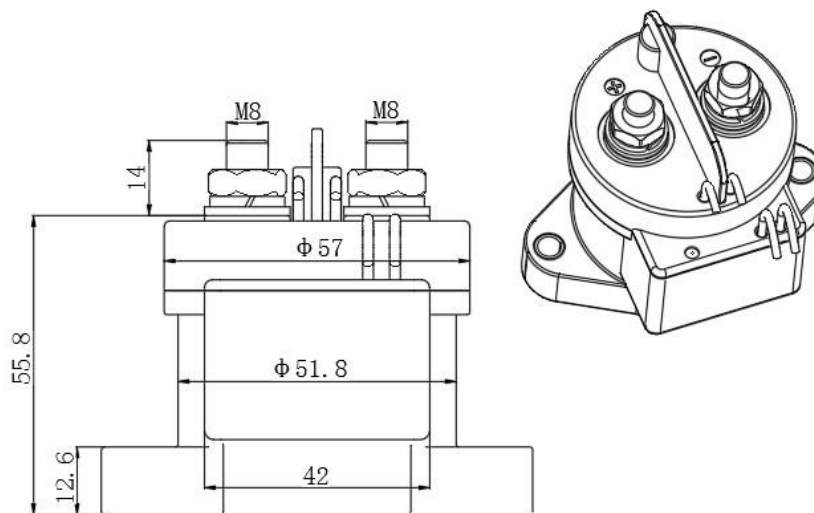


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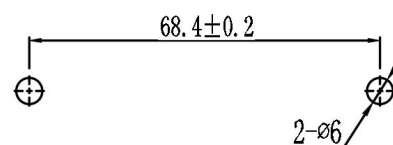
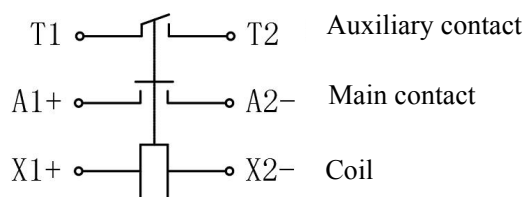
## Dimensions (mm)



Permissible deviations for basic size range	Tolerance
Up to 10	$\pm 0.3$
Over 10 up to 50	$\pm 0.6$
Over 50	$\pm 1.0$



## Circuit and Layout Dimensions (mm)





## Cautions

- Please use relays in the conditions described in the specification. Otherwise product performance will not be guaranteed.
- Please add surge protection in parallel if an inductive load ( $L/R > 1\text{ms}$ ) is applied.
- Contact resistance may increase if a relay is operating without a load.
- Please connect the terminals correctly. Any wrong connection may cause circuit damage such as malfunction, overheat, and fire.
- Screwing-tightening condition: A) M5 Screw:  $3\text{Nm} \sim 4\text{Nm}$  (Tightening torque for fixing relay body)  
B) M8 Screw:  $10\text{Nm} \sim 12\text{Nm}$  (Tightening torque for contact terminal)
- Use the suitable wires or busbars according to the current. Carrying current: 200Amps; diameter of  $95\text{mm}^2$  (min.).
- Standard operation condition: temperature  $-40^\circ\text{C} \sim 85^\circ\text{C}$ , humidity  $5\% \sim 85\%\text{R.H.}$ .
- Correct installation of the connector: the coil circuit is polarized.
- If the relay is dropped, it should not be used again.

(Please do not determine specifications based on this document. Contact our sales staff for more information and supports.)