尼普顿电器 Neptune Electric

HVDC Relay NVR5V-20

Medium Voltage Series

Features

- RoHS compliant;
- Magnet arc blowout;
- Up to 450VDC Cutoff;
- Compact and lightweight;
- Polarity free coil circuit

Applications

- Main contactors for HEV, PHEV and BEV;
- Battery charging systems;
- Power charging devices;
- Solar power systems;

Product Code Structure

NVR5 V - 20 / 450 - 12 - H P 4 ( )

- Series
- DC input in vehicle areas
- Load current: 20:20A
- Load voltage: 450:450V
- Coil voltage: 12:12V;24:24V
- Contact arrangement: H:SPST-NO;
- Coil termination:P:TM type
- Load termination:4 TM type
- Customized code

Coil Data

Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Rated operating power W
12	≤8.4	≥1	2.5~3.5W
24	≤16.8	≥2	
48	≤36	≥4	
60	≤45	≥5	

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

尼普顿电器
Neptune Electric

HVDC Relay NVR5V-20

Medium Voltage Series

Main Contact Data

Contact arrangement		1H	
Initial contact resistance		≤10mΩ (20A)	
Rated current		20A	
		60V Type	450V Type
Max. Switch voltage		72V	450V
Max. Switch current		30A	35A
Max. Switch power		1.44kW	9kW
Limiting short-time current		40A:20min	
		80A:30s	
		120A:10s	
Dielectric strength	Between contact and coil	3000V AC/1min	
	Between contacts	2000V AC/1min	
Insulation resistance	Between contact and coil	Min: 1000MΩ (1kV DC)	
	Between contacts		
Operate time		≤30ms	
Release time		≤10ms	

Other Data

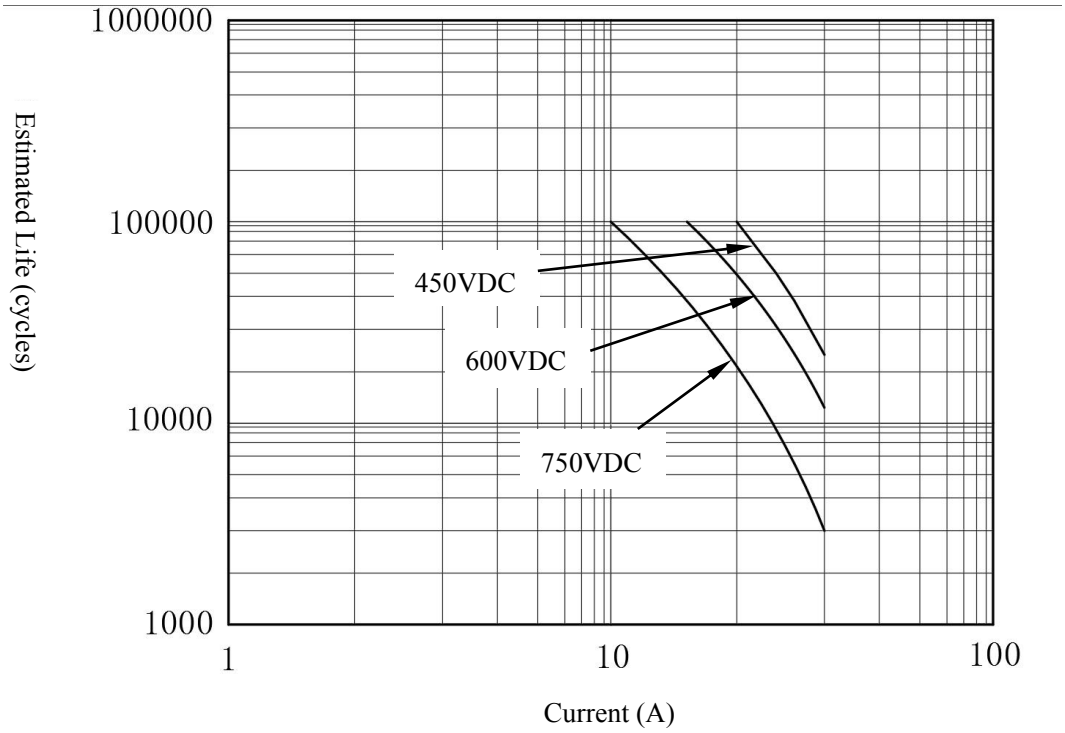
Endurance	Mechanical	3×10^5 times	
	Electrical (Resistive load)	60V Type	Switch-off:1×10^5times@20A, 72V
		450V Type	Switch-off:1×104times@20A
			Switch-off:5×104times@10A
			Switch-on:1×105times@20A
Mechanical performance	Shock resistance (Functional)	20G	
	Shock resistance (Destructive)	50G	
	Vibration resistance (Functional)	5G(10～500Hz)	
	Vibration resistance (Destructive)	5G(10～500Hz)	
Operational condition	Ambient temperature	-40℃～+85℃	
	Relative humidity	20%～90% R.H.	
Weight		Approx. 50g	

尼普顿电器
Neptune Electric

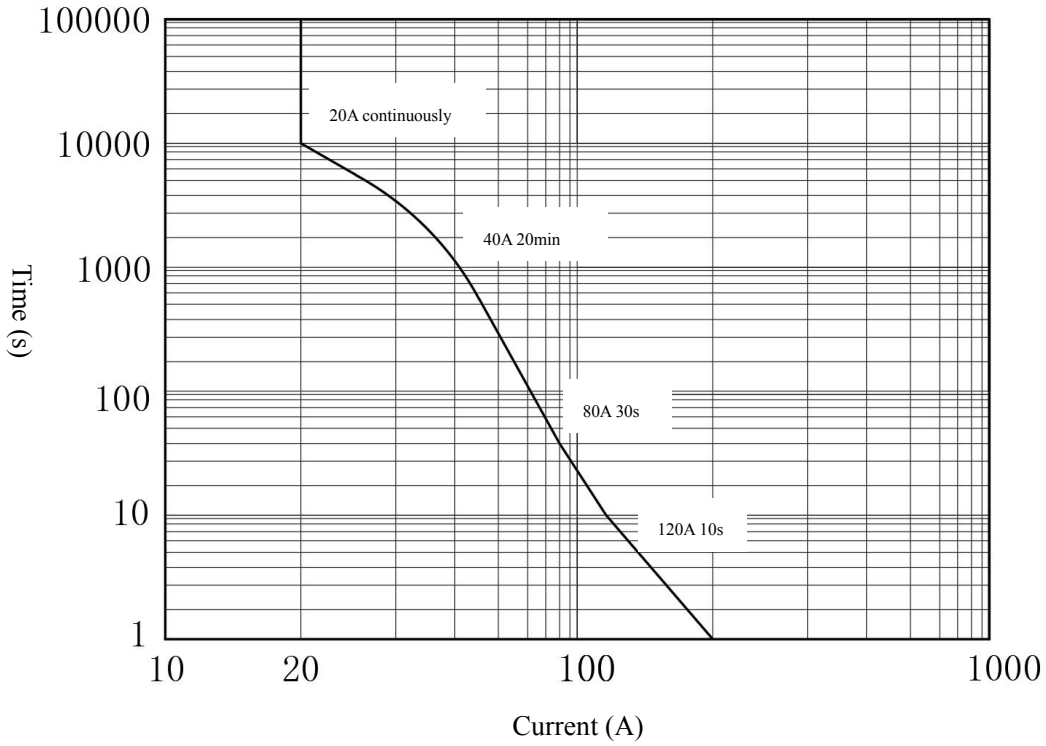
HVDC Relay NVR5V-20

Medium Voltage Series

Estimated Life Diagram



Contacts Current Capacity Diagram

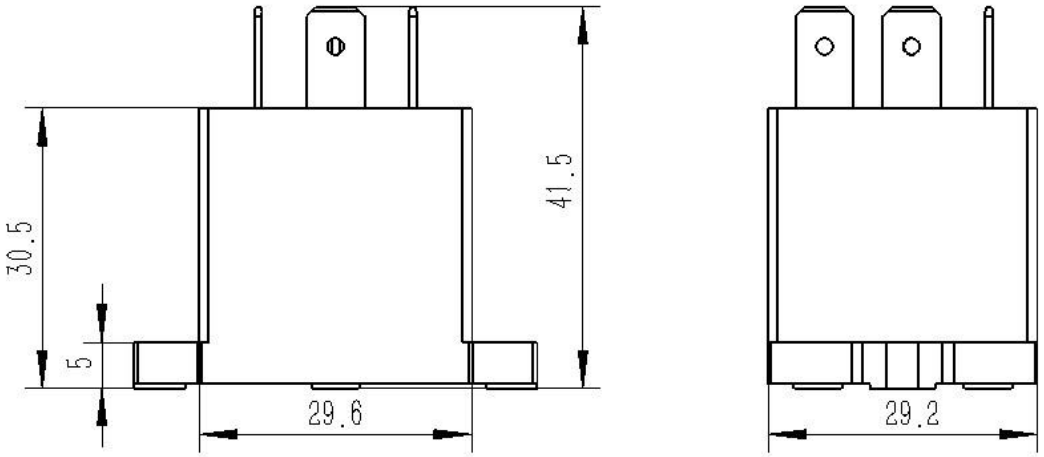


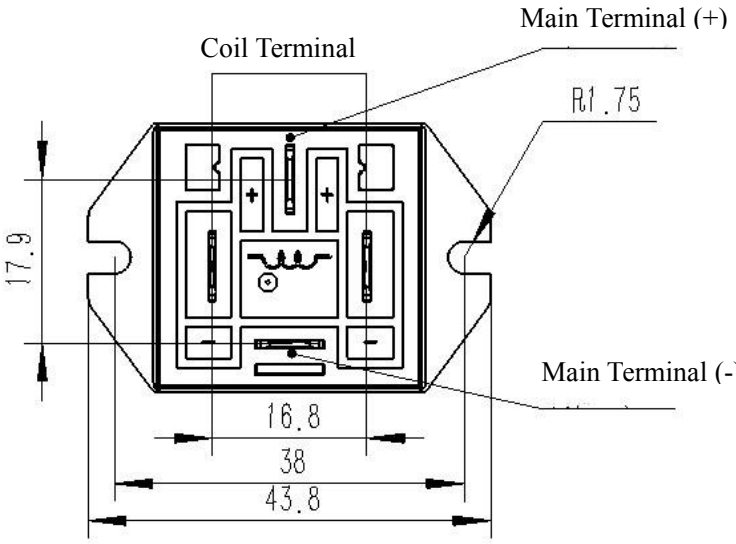
尼普顿电器
Neptune Electric

HVDC Relay NVR5V-20

Medium Voltage Series

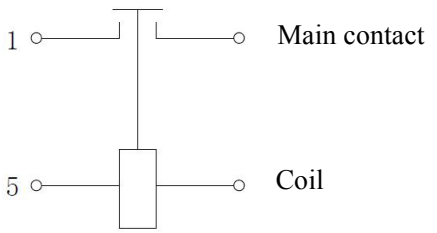
Dimensions (mm)

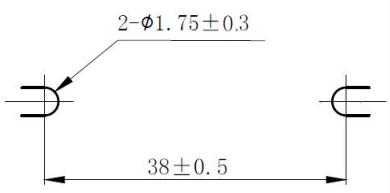




Permissible deviations for basic size range	Tolerance
Up to 10	±0.3
Over 10 up to 50	±0.6
Over 50	±1.0

Circuit and Layout Dimensions (mm)





尼普顿电器 Neptune Electric

HVDC Relay NVR5V-20

Medium Voltage Series

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＞1ms) is applied.
- If the relay operates on no load condition,the contact resistance may increase.
- Please connect the terminals correctly.Any wrong connection may cause circuit damage such as malfunction,overheat,and fire.
- Screwing-tightening condition: M3 Screw:0.8Nm~1.3Nm (Tightening torque for fixing relay body).
- Use the suitable wires or busbars according to the current.Carrying current:20Amps:diameter of 4mm^2 (min.).
- Standard operation condition:temperature -40℃~85℃,humidity 20%~90%R.H..
- 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.)