CHEV-P500E 500A High Voltage Direct Current Relay

Churod Electronics

FEATURES

- Ceramic brazing sealed technology guarantees no risk of arc leaking and ensures no fire or explosion
- Filled with gas（mostly hydrogen) to minimize contact oxidation and damage from arcing; the contact resistance is low and stable
- Contact part can meet IP67 protection level
- Current rated load continuously at 85°C
- Insulation resistance is 1000MΩ（1000VDC),and dielectric strength between the coil and contacts is 4.0kV ,which meets the requirements of IEC 60664-1

APPLICATION

New energy vehicle

Energy storage

Charging pile

Solar

CONTACT DATA

Main Contact Arrangement	1 Form A
Initial Contact Voltage Drop	≤150mV at 500 A
Rated Current (resistive load)	500 A （@ 200mm^2)
Rated Switching Voltage	1000VDC
Min.Applicable Load	6VDC，1 A
Max. Switching Power（1000VDC)	500kW
Max. Breaking Current	2000A (450VDC)

COIL DATA @ 23℃

Nominal Voltage (VDC)	Coil Power (W)	Nominal Current (A)	Coil Resistance (Ω±10%)	Pick-up Voltage (VDC)	Drop-out Voltage (VDC)
12	6	0.50	24	9.0 Max.	1 Min.
24	6	0.25	96	18.0 Max.	2 Min.

ENDURANCE

Electrical Life (resistive Load)	Breaking：50 ops (1000 VDC,500A)
	Breaking：100 ops (750 VDC,500A)
Electrical Life (Capacitive Load)	接通：2.5×10^4 ops (37.5 VD, 500A；τ=1ms，C=1100μF)
	接通：1ops (300VD, 1350A；τ=1ms，C=1100μF)
Current Enduranc	500A，持续
	600A, 10分钟
	700A, 1分钟
	2000A, 0.6秒
Mechanical endurance	1x10^6 times, on-off ratio: 0.5s: 0.5s

CHARACTERISTICS

Operate Time(at nominal voltage)		≤35ms
Release Time(at nominal voltage)		≤15ms
Insulation Resistance		> 1000 MΩ (at 1000 VDC)
Dielectric Strength	Between Coil and Contacts	4,000 VAC, 50/60 Hz （1min)
	Between Open Contacts	4,000 VAC, 50/60 Hz （1min)
Vibration		10Hz～500Hz，49 m/s^2
Shock Resistance	Functional	196 m/s^2
	Destructive	490 m/s^2
Ambient temperature		-40℃～85℃
Humidity		5%RH to 85%RH
Weight		Approx 570g

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ORDERING INFORMATION

CH	EV –	P	500	/ E–	12	C	A	1	, XXX

Company Code
CH: Churod

Application Area
EV: Electric Vehicle

Series Code
P: P Series

Load Current
500: 500A

Load Voltage
E: 1000VDC

Coil Specification
12: 12VDC; 24: 24VDC

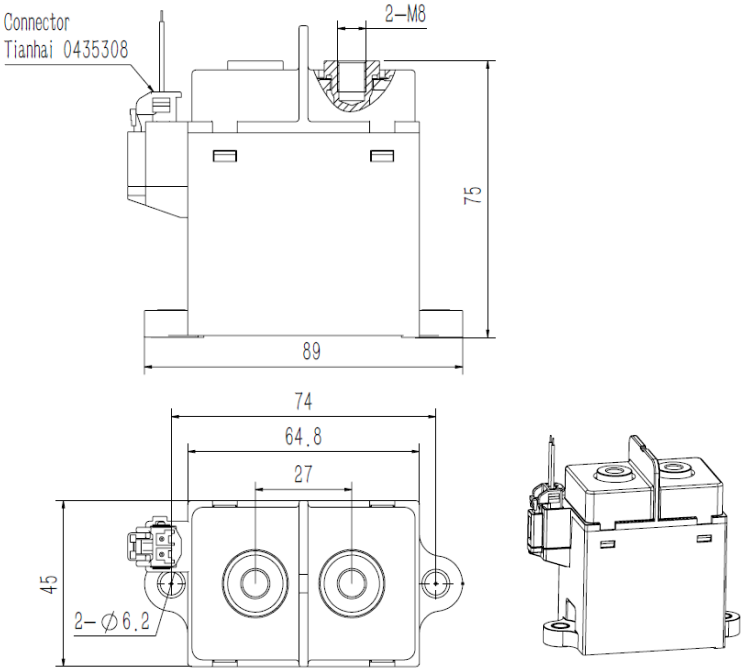
Coil Termination
C: Connector

Contact Type
A: Form A

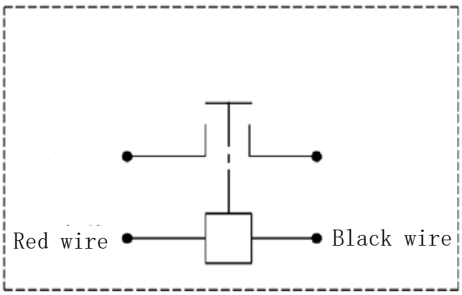
Load Termination
1: Screw Terminal Female

Characteristic Code
Blank or Other Customer Requirements

OUTLINE DIMENSION



WIRING DIAGRAM



Note: The coil and the load have no polarity

Note: All unspecified tolerance according to following table.

Outline dimensions hadn't specified tolerance	
Outline Dimensions	Tolerance
≤10	±0.3
10~50	±0.6
>50	±1

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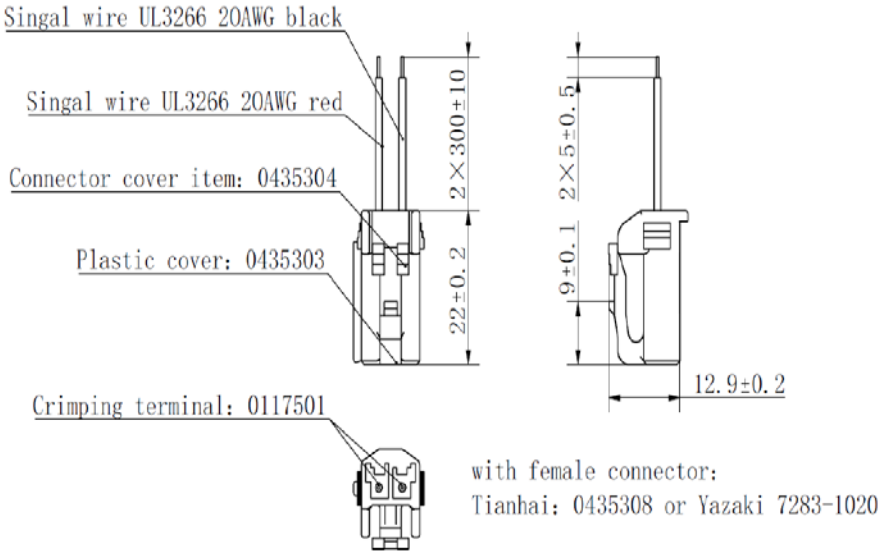
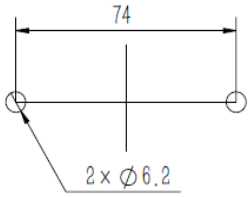
COIL TERMINATION:CONNECTOR



INSTALLATION INFORMANTION

Load Terminal Installation				
Installation Mode	Selection Screw	Torque	Copper Busbar Diameter	Copper Busbar Thickness
M8 Screw	M8 Combined Bolt	9 N·m ~11N·m	Ø 8.0 mm~Ø 8.5 mm	3.0mm~5.0 mm

Relay Installation		
Mounting Type	Horizontal or vertical direction	Mounting Hole Size
Installation Mode	M6 Screw	
Torque	3N·m ~4N·m	

ENGINEERING NOTES

1. Unless otherwise explicitly stated, the standard environment conditions for measurement or testing are listed as followings:
Ambient temperature is 23℃±5℃.
Atmospheric pressure is 96×（1±10%）kPa.
Relative humidity is 25% RH ~ 75% RH.
2. In order to curb the reverse electromotive force of coil, a nonlinear resistor is recommended to use（ZNR is recommended，the max energy tolerance:≥1J. Voltage: 1.5～2 times the rated voltage）. Please be noted that a diode will make the release time of relay increase, which should lead to the degradation of cutting-off capability.Relay products with circuit board do not need to add a device to curb the reverse electromotive force of the coil.
3. The rating load of contact is resistive load. Please assure a surge absorption device together with inductive load when using the L/R≥1ms inductive load (L Load), otherwise it may lead to the decrease of electrical endurance and defective switch.