CHPV-S400 400A 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

Energy storage system
Construction machinery
Charging pile
Solar inverter

CONTACT DATA

Main Contact Arrangement	1 Form A
Initial Contact Voltage Drop	≤6mV at 20 A
Rated Current (resistive load)	400 A （@ 240mm^2)
Rated Switching Voltage	1500VDC
Min.Applicable Load	6VDC，1 A
Max. Switching Power	600kW
Max. Breaking Current	2000A (1000VDC)
Aux. Contact Arrangement	1 Form A
Rated Load of Aux.	6VDC，100mA
Max Load of Aux.	24VDC，300mA

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	Driving 55 Holding 6	Driving 4.6 Holding 0.5	Driving 3.0 Holding 24.5	8.0 Max.	1.2 Min.
24	Driving 55 Holding 6	Driving 2.3 Holding 0.25	Driving 11.4 Holding 108.6	16.0 Max.	2.4 Min.

ENDURANCE

Electrical Life (resistive Load)	Switching：6000 ops (1500 VDC, 150A)
	Breaking：3000 ops (1500 VDC, 300A)
	Switching：100 ops (1500 VDC, 400A)
	Breaking：1000 ops (1500 VDC, 400A)
	Breaking：1 op (1000 VDC, 2000A)
Current Enduranc	400A, Cont.
	500A, 2000s
	1350A, 15s
	2000A, 1s
Mechanical endurance	2x10^5 times, on-off ratio: 0.5s: 0.5s

CHARACTERISTICS

Operate Time(at nominal voltage)		≤50ms
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 900g

ORDERING INFORMATION

CH	PV	–S	400	/ F –	24	C	A	1	– A	C	, XXX

Company Code
CH: Churod

Application Area
PV: Photovoltaic Energy Storge

Series Code
S: S Series

Load Current
400: 400A

Load Voltage
F: 1500VDC ; E: 1000VDC

Coil Specification
12: 12VDC ; 24: 24VDC ;

Coil Termination
C: Connector

Contact Type
A: Form A

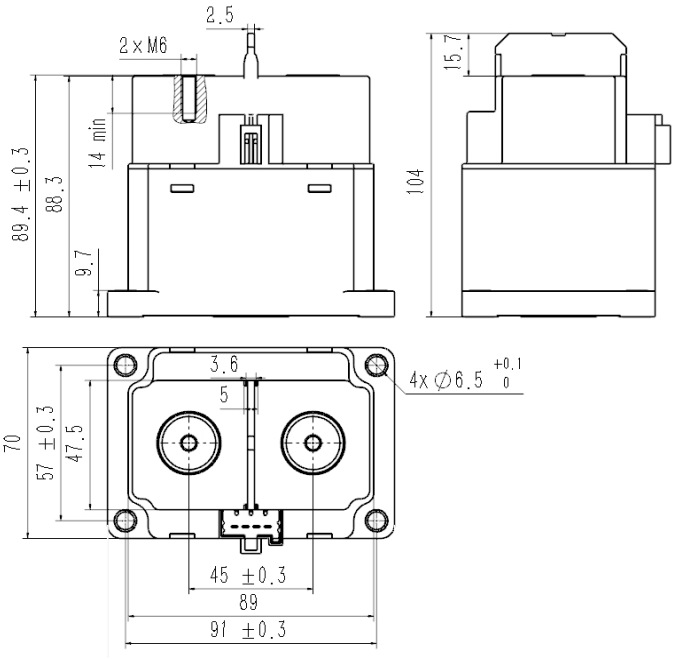
Load Termination
1: Screw Terminal Female

Aux. Contact Type
A: Form A

Aux. Contact Termination
C: Connector

Characteristic Code
Blank or Other Customer Requirements

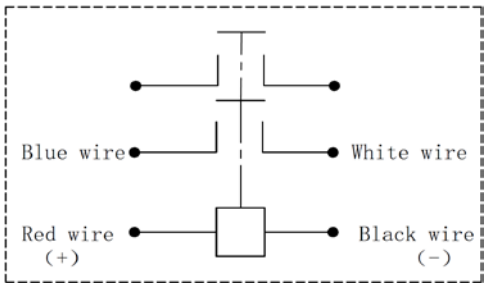
OUTLINE DIMENSION



Note: All unspecified tolerance according to following table.

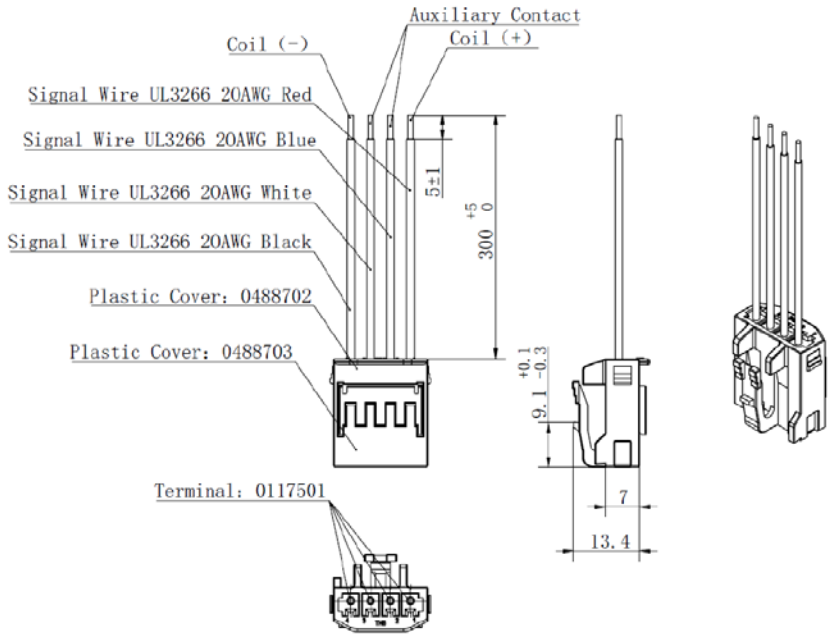
Outline dimensions hadn't specified tolerance	
Outline Dimensions	Tolerance
≤10	±0.3
10 ~ 50	±0.6
> 50	±1

WIRING DIAGRAM



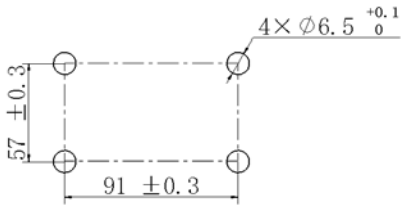
Note: The coil has polarity, The load and Aux. have no polarity

COIL TERMINATION:CONNECTOR



INSTALLATION INFORMANTION

Load Terminal Installation				
Installation Mode	Selection Screw	Torque	Copper Busbar Diameter	Copper Busbar Thickness
M6 Screw	M6x18 Combined Bolt	6 N·m ~8N·m	Ø 6.0 mm~Ø 6.5 mm	3.0mm~5.0 mm

Relay Installation		
Mounting Type	Horizontal or vertical direction	Mounting Hole Size
Installation Mode	M6 Screw	
Torque	6 N·m ~8N·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.