

CHPV -S40 40A High Voltage Direct Current Relay

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(1000Vd.c.),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	≤120mV at 40 A
Rated Current (resistive load)	40 A (@10mm ²)
Rated Switching Voltage	1500VDC
Max. Switching Power (1500VDC)	6VDC, 1 A
Max. Breaking Current	60kW
Min.Applicable Load	400A (300VDC)

COIL DATA @

Nominal Voltage (VDC)	Coil Power (W)	Nominal Current (A)	Coil Resistance (Ω±10%)	Pick-up Voltage (VDC)	Drop-out Voltage (VDC)
12	2.6	0.22	55.4	9.0 Max.	1 Min.
24	2.6	0.11	221.6	18.0 Max.	2 Min.

ENDURANCE

Electrical Life (resistive Load)	Switching: 2×10 ⁴ 次 (450 Vd.c.,40A)
	Switching: 1000次 (750 Vd.c.,40A)
	Making: 7.5×10 ⁴ 次 (750 Vd.c.,40A)
	Switching: 6000次 (1500 Vd.c.,15A)
	Making: 1.5×10 ⁴ 次 (1500 Vd.c.,40A)
Current Enduranc	40A, Cont.
	60A, 1.0 h
	80A, 20 min
	160A, 30 s
	320A, 10 s
Mechanical endurance	400A, 0.6 s
	2×10 ⁵ times, on-off ratio: 0.5s: 0.5s

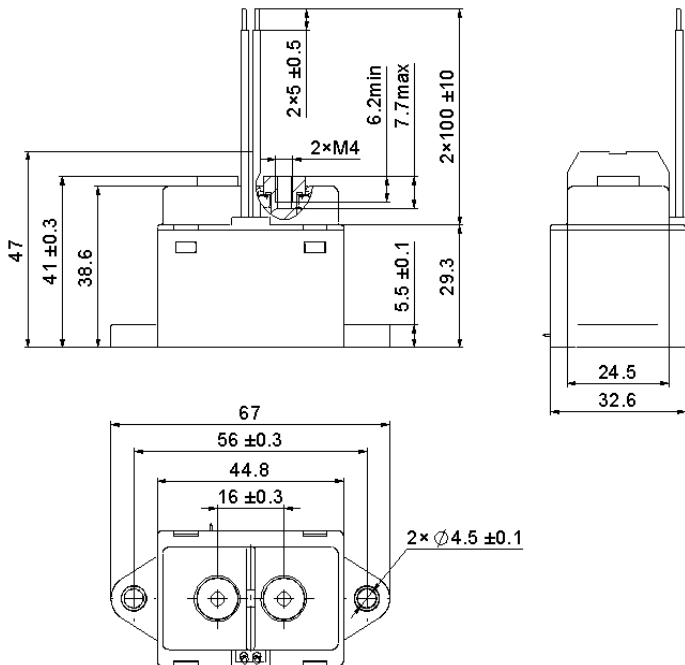
CHARACTERISTICS

Operate Time(at nominal voltage)	≤15ms	
Release Time(at nominal voltage)	≤5ms	
Insulation Resistance	> 1000 MΩ (at 1000 VDC)	
Dielectric Strength	Between Coil and Contacts	4,000 VAC, 50/60 Hz (1min)
	Between Open Contacts	3,000 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°C ~ 85°C	
Humidity	5%RH to 85%RH	
Weight	140g	

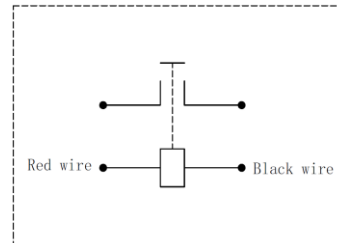
ENDURANCE

	CH	PV	-S	40	/ F -	12	L	A	1	, XXX
Company Code	CH: Churod									
Application Area	PV: Photovoltaic Energy Storage									
Series Code	S: S Series									
Load Current	40: 40A									
Load Voltage	F 1500VDC									
Coil Specification	12: 12VDC; 24: 24VDC									
Coil Termination	L: Wire									
Contact Type	A: Form A									
Load Termination	1:Screw Terminal Female									
Characteristic Code	Blank or Other Customer Requirements									

OUTLINE



WIRING DIAGRAM



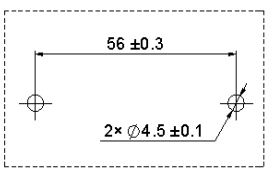
Note: No polarity on the load and coil

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

INSTALLATION INFORMANTION

Load Terminal Installation				
Installation Mode	Selection Screw	Torque	Copper Busbar Diameter	Copper Busbar Thickness
M4 Screw	M4x8 Combined Bolt	2 N·m ~3N·m	∅ 4.0 mm~∅ 4.5 mm	1.0mm~1.5 mm

Relay Installation		
Mounting Type	Horizontal or vertical direction	Mounting Hole Size
Installation Mode	M4 Screw	
Torque	2 N·m ~3N·m	

ENGINEERING NOTES

1. Unless otherwise explicitly stated, the standard environment conditions for measurement or testing are listed as followings:

Ambient temperature is 23°C±5°C.

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.