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Ideal Power Solution

CCP1000 Series High Voltage Power Module

Overview

The CCP1000 series high-voltage power supply is a single-phase 220Vac input modular high-voltage power supply. The whole series HVPS adopts small and compact aluminum chassis. The designed output power is up to 1KW with the output voltage levels, at 5KV / 10KV / 20KV / 30KV / 40KV / 50KV.



Output polarity: positive or negative (on-demand)

Using resonant inverter with PWM control, it is a constant-voltage and constant-current type high-voltage power module, the output voltage and current of the high-voltage power supply module can be continuously adjusted from approximately 0 to the rated value with potentiometers installed on the local circuit board.

The HV power module is also equipped with a DB9 interface to facilitate the bus control of embedded installation equipment. Customers can apply 0-10V signals and dry contact signals to the interface according to our interface definition to achieve comprehensive control and monitoring functions on the power supply, like high voltage start / stop, output setting and reading.

The CCP1000 series high-voltage power supply is equipped with complete protection functions to deal with sparking, short-circuit and overload conditions. With the discharge protection circuit recommended by iDealTek-Electronics, this high-voltage module can also cope with charging and discharging conditions of conventional capacitors and other applications that require the embedded high-voltage power supply modules.

Features

- Charge and discharge frequency: customizable
- Repeatability accuracy: better than 0.5%
- Withstand ground potential rise.
- Output voltage & current continuously adjustable.
- Output voltage adjustable via local potentiometer or remotely.
- Output polarity on customers' demand.
- Small size, light weight
- Stable output, high efficiency (85%)

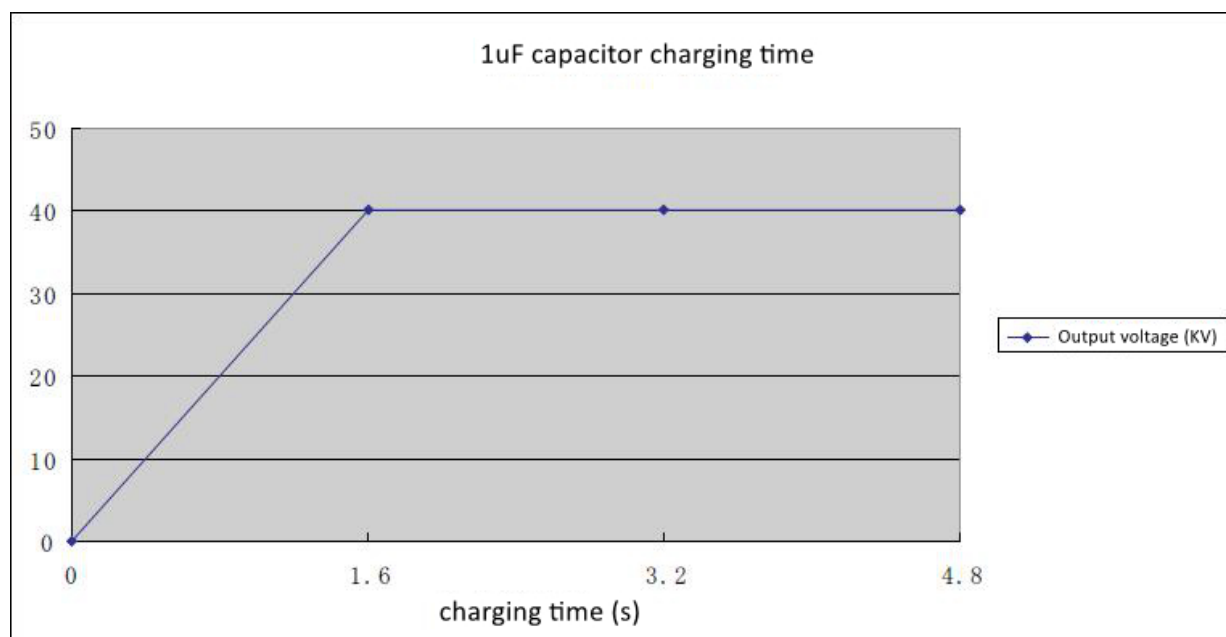
Specifications

Input	Typical value									Unit
Voltage	220 (200 ~ 240Vac)									Vac
Current	< 6 @ 220Vac									A
Output	5	10	20	30	40	50				KV
Range	0-5	0-10	0-20	0-30	0-40	0-50				KV
Power	1000	1000	1000	1000	1000	1000				W
Current	200	100	50	33	25	20				mA

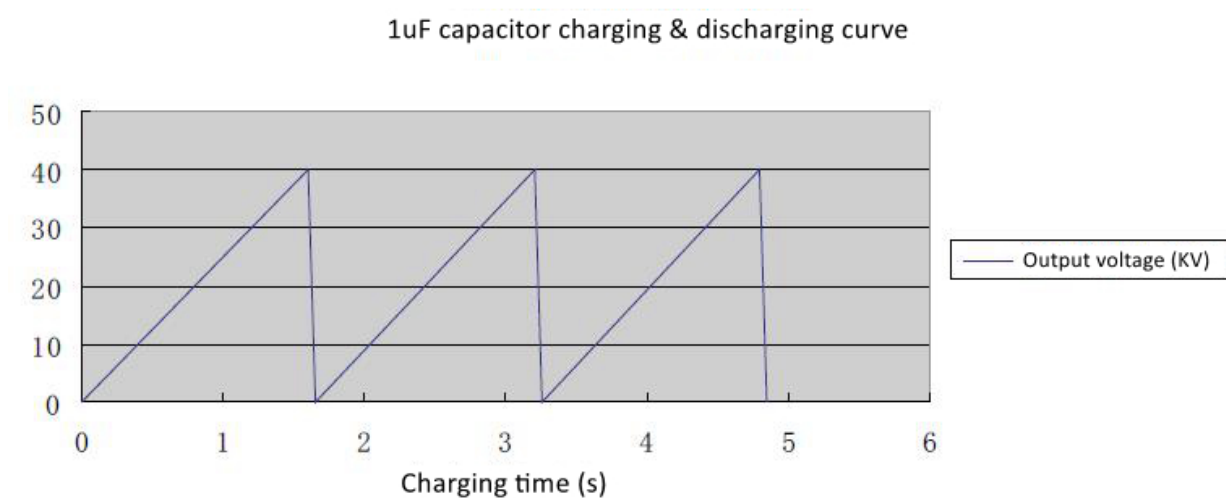
Features

Line regulation	<0.5%								
Load regulation	<0.5%								
Temperature drift	<300ppm/°C (working temperature<55°C)								
Ripple voltage	<1% (@100% load) (R.M.S value)								
Working temperature	-10°C ~ 55°C								
Storage temperature	- 20°C ~ 80°C								
Size	360mm×180mm×136mm								
Weight	2Kg ~ 6Kg (depends on output voltage)								

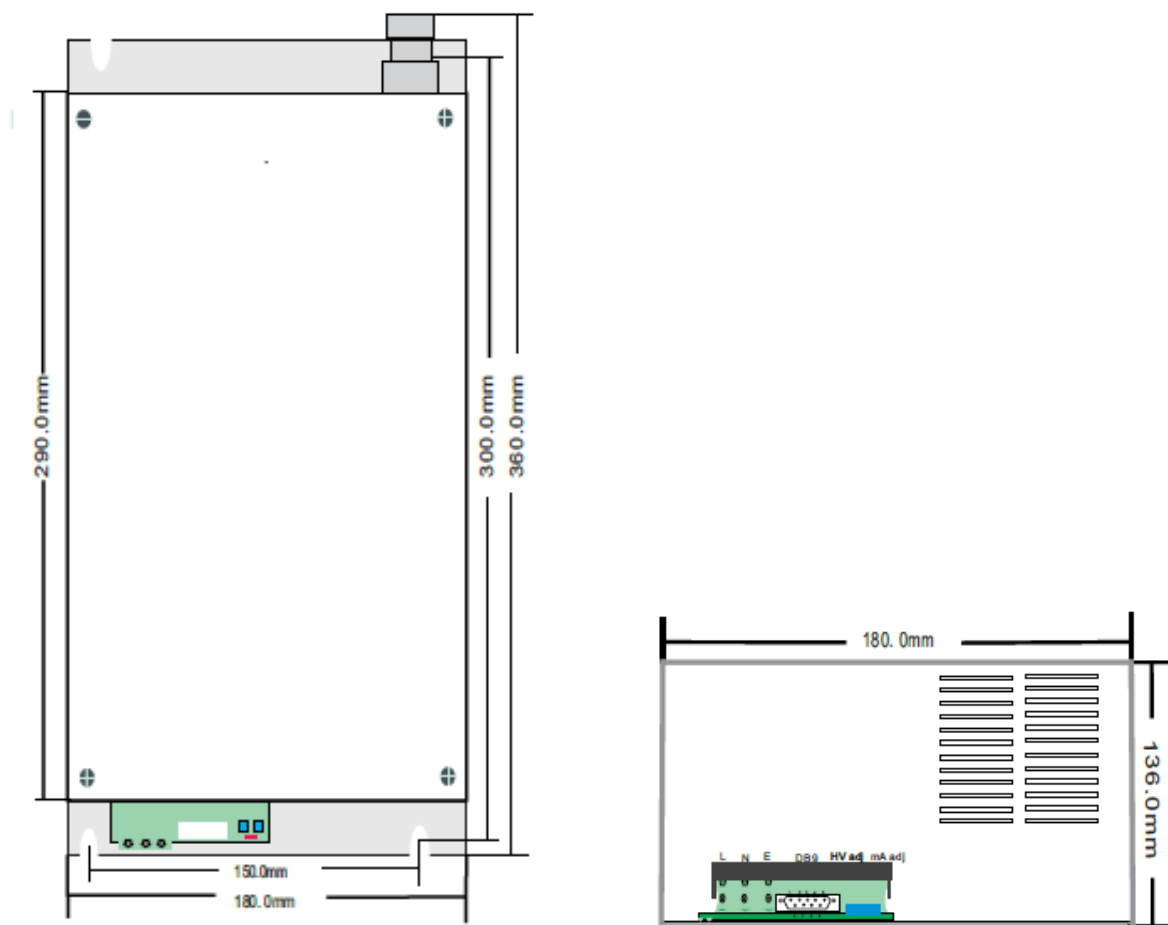
Power Curve (40KV, 1000W)

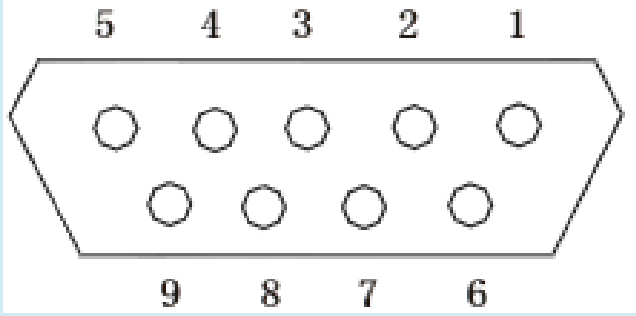


Continuous charging & discharging curve (40KV, 1000W)



Physical drawing



Input interfaces		Output interfaces		
Pin code	Definition	Pin code	Pin code	Definition
L	LIVE LINE	1	GND	GND
N	NULL LINE	2	EOC	End of charging
E	GND LINE	3	VDEM	Voltage setting
DB9 Control pin interface (female)		4	VREF	Reference
		5	VFBK	Voltage feedback
		6	+12VDC	+12V voltage
		7	HV ENABLE / INHIBIT	HV ON / OFF
		8	IDEM	Current setting

The port on power supply main board is female, male port is required for connection to complete the corresponding control functions.	9	IFBK	Current feedback
	Enclosure		Aluminum alloy

Control pin description

Pin1: control GND (GND).

Pin2: End of charging detection, The internal circuit is opt-coupler collector open circuit output, when the power supply is under charging state, pin-2 to the ground (pin-1) is under cut-off state; when the capacitor voltage is fully charged, pin-2 to the ground (pin-1) is conducted, which will allow no more than 20mA current flow through. When the voltage on capacitor is below the set charging voltage, pin-2 to the ground (pin-1) is restored to the cut-off state from conducted state.

Pin3: voltage setting, 0-5V corresponding to 0-rated output voltage value.

Pin4: Voltage reference output 5V.

Pin5: voltage feedback, 0-5V corresponding to 0-rated output voltage value.

Pin6: +12V power supply for external use, current not exceeding 200mA.

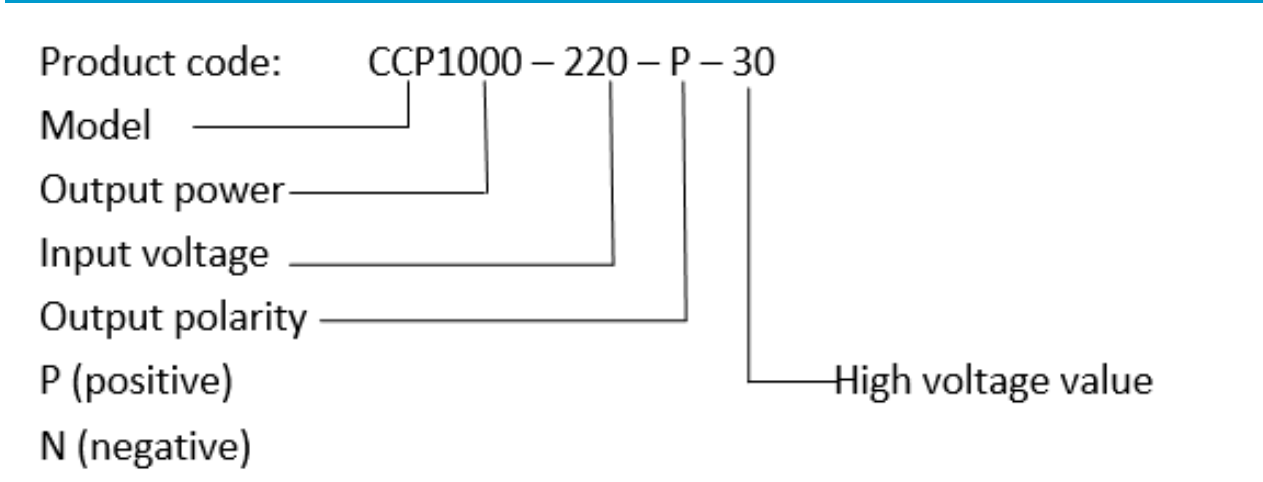
Pin7: HV enable / inhibit port: add +12Vdc between this pin and pin1, HV ON; 0V or floating, HV OFF.

Pin8: current setting: 0-5V corresponding to 0-rated current value.

Pin9: current feedback: 0-5V corresponding to 0-rated current value.

Note: Current of the product is sampled from primary current control, the current setting signal value should be set greater than 0.7V, otherwise no voltage and current output.

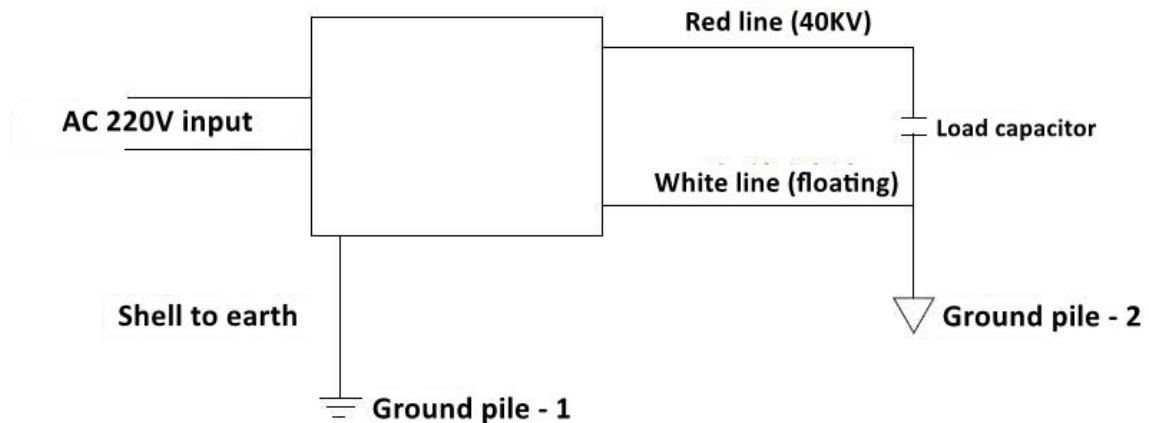
Naming rules



Safety notes

1. The power supply is high voltage power supply, please operate carefully under instruction of professional persons, or it will cause human safety problem.
2. Please check below issues before starting power supply.
 - (1). Power supply should be located in clean and dry condition.
 - (2). No relative objects besides HV output or HV load.
 - (3). Make sure that reverse current of load well-grounded via GND terminals on the back panel.

Wiring diagram (for reference only)



Product Description: Product grounding bolt on back panel connects to grounding pile 1, the black terminal on back panel connects to the floating white line, and the negative end of capacitance, that is, the pile 2 in the picture above.