

PVD Power Supply PVD30K-40K1KM



## FEATURE

- Output voltage  $\pm 1000\text{V}$  / 40kHz
- Output power up to 30kW
- Over current, over temperature, under voltage protection
- Human-computer interaction interface, display waveform, data intuitive, easy to operate
- High density power supply, full automatic, high equipment stability, easy maintenance
- Solve the problem of yin-yang target material
- Customization available

PVD30K-40K1KM—It is a high-efficiency vacuum magnetron RF sputtering power supply with high output power. The power supply can provide 1000VAC output voltage and power up to 30kW. The power supply has the advantages of high reliability, low power consumption and high output power. Mainly suitable for vacuum plating industry.

## Selection Guide

Part No.	Input Voltage	Output Voltage (No Load)	Maximum Output Current	Maximum Output Power
PVD30K-40K1KM	380 VAC (3-phase)	1100 VAC	37.5 A	30 kW

## Input & output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage	3-phase AC input, phase line- phase line	360	380	400	VAC
	3-phase AC input, phase line- zero line	209	220	231	VAC
Input Voltage Frequency (1-phase)	3-phase AC input	--	50/60	--	Hz
Output Frequency	3-phase AC input	--	40	--	kHz
Maximum Output Current	3-phase AC input	--	37.5	--	A
Maximum Output Power	3-phase AC input	--	30	--	kW
Output Current Accuracy	3-phase AC input	--	$\pm 3$	$\pm 5$	%
Output Voltage (No Load)	3-phase AC input	1000	1100	1150	VAC
Maximum Output Voltage (On Load)		--	800	--	VAC
Efficiency	3-phase AC input	83	85	--	%
Operating Mode	Constant voltage, constant current, constant power				
Communication Protocol		RS485		Analog Quantity	
	PVD30K-40K1KM	$\checkmark$		$\checkmark$	

## Protection Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Over-current Protection Threshold	When the input current is greater than the protection value, the protection is triggered and the output is turned off	80	--	--	A
Input Under-voltage Protection Threshold	When the 1-phase input voltage is lower than the threshold, the protection is triggered and the output is turned off	--	--	186	VAC
Over Temperature Protection Threshold	Trigger protection temperature threshold and the output is turned off	55	60	65	$^{\circ}\text{C}$
	Trigger resetting temperature threshold	37	45	53	$^{\circ}\text{C}$

\*Notes:

1. Over-current protection: When the total input current exceeds the threshold, the protection is triggered and the output is turned off.
2. Under-voltage protection: When the single-phase input voltage is lower than the protection voltage threshold and the remaining two-phase voltage is unchanged, the main switch of the product will be disconnected.
3. Overtemperature protection: When the internal temperature of the product exceeds the temperature threshold, the overtemperature protection action is triggered, and the output will be disconnected. After the overtemperature protection is activated, the product stops working. You can restart the power supply only after the internal temperature of the product drops to the reset temperature threshold.
4. When the above protection is triggered, it is necessary for technical personnel to check and confirm that there is no problem with the product, and manually operate the power supply to work normally again.

## Isolation Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input & output to Chassis, 1min; leakage current $\leq 5$ mA	--	--	2000	VAC
Insulation Resistance	Input & output to Chassis, 500VDC	1	--	--	MΩ

## General Specifications

Item	Min.	Typ.	Max.	Unit
Operating Temperature	0	25	40	°C
Storage Temperature	-5	--	45	°C
Storage Humidity	5	--	75	%RH
Cooling Method	Water cooling and fan cooling			
Cooling Water Pressure	1	--	2	Kg/cm <sup>2</sup>
	0.1	--	0.2	Mpa
Cooling Water Temperature	Recommended Inlet Temperature		--	°C
	Temperature difference between inlet and outlet		10	°C
ON/OFF Switching Interval Time	10	--	--	min
MTBF	MIL-HDBK-217F@25°C $\geq 10,000$ h			
Altitude	$\leq 2000$ m (Barometric pressure: 80 to 110KPa)			

## Mechanical Specifications

Item	Min.	Typ.	Max.	Unit
Weight	37.5	38	38.5	kg
Dimension	705*480*240			mm

Connection and Description

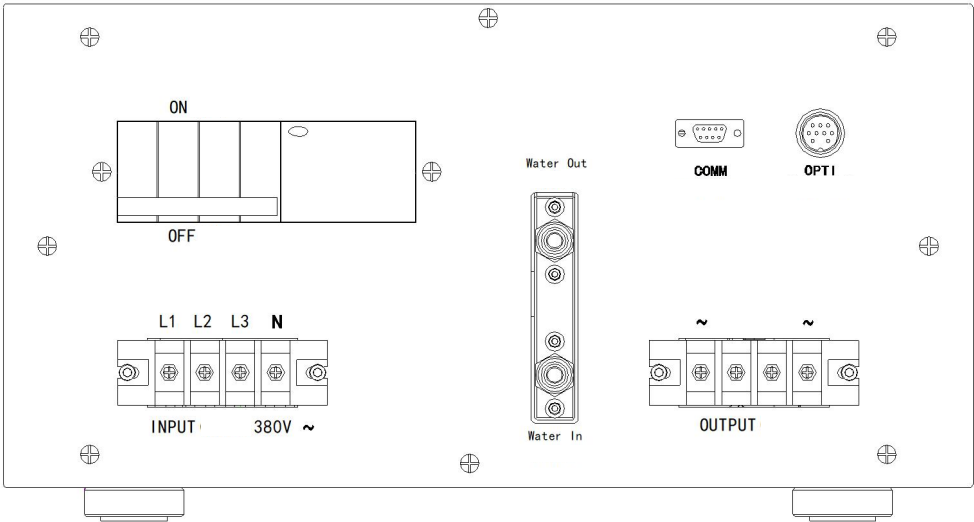


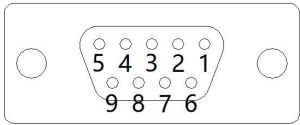
Fig 1 PVD30K-40K1KM Product connection mark

Product connection description:

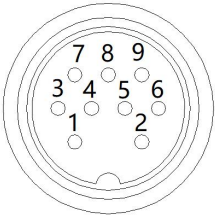
Mark		Description	Specifications		
			Wire cross-sectional area	Screw	Torsion ( Max )
Input	L1, L2, L3	The product input terminal, connected to the phase line	8mm <sup>2</sup>	M6	5.0 N·m
	N	The product input terminal, connected to the zero line	8mm <sup>2</sup>	M6	5.0 N·m
Output	~, ~	The product output terminal, connected to the load	10mm <sup>2</sup>	M6	5.0 N·m
			External Diameter of Pipe	Internal Diameter of Pipe	
Water in		Cooling water inlet	12mm	8mm	
Water out		Cooling water outlet	12mm	8mm	
			Recommended Connector		
COMM		Communication port	DB9 Double row 9-pin plugs		
OPTI		Communication port	GX20 nine-core aviation female connector		

Note:

1. The product input terminals L1, L2, L3 and N are connected to three-phase voltage regulators. Pay attention to the product input voltage range. It is recommended to use three-phase voltage regulators with voltage accuracy of  $\pm 5\%$ .
2. Please use pure water as cooling water to avoid impurities deposition blocking the cooling water circulation channel, affecting the cooling effect of the product.
3. Connect the cooling water inlet and outlet pipes in strict accordance with the mark. When connecting the cooling water pipes, pay attention to tighten the interface to prevent the leakage of cooling water and affect the electrical safety of the product.
4. Ensure that the cables are tight and correctly connected before powering on the product.
5. When the product is working, the input and output ends are under high pressure. Do not touch the product with hands or other conductors.
6. Hot plug is unavailable.
7. The product is strictly prohibited to be disassembled without permission, the product has energy storage components, disassembly may lead to electric shock, the switching interval time should be  $\geq 10$  min.
8. If you need to change the communication protocol, please contact the manufacturer for confirmation, so as not to cause the product can not work and damage.



COMM



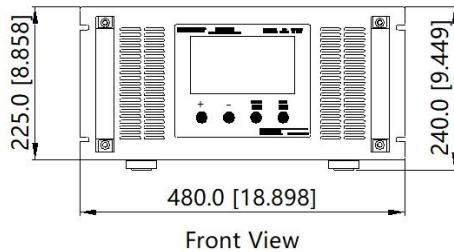
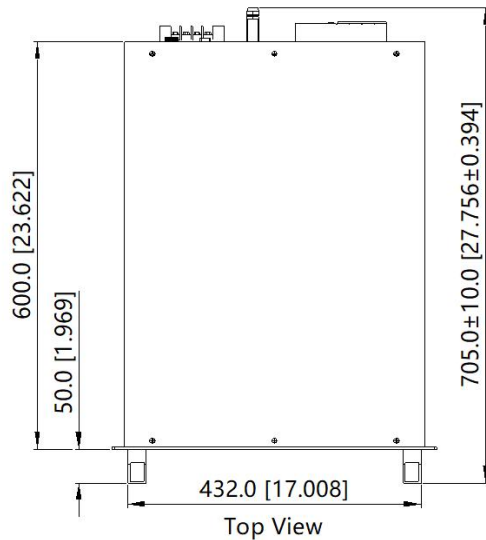
OPTI

Communication pin description:

Mark	Pin	Description
COMM	1	RS485-A
	2	RS485-B
	5	GND
	3,4,6,7,8,9	NC
OPTI	1	0V-10V (+)
	2	0V-10V (-)
	3	Switch quantity 1
	4	Voltage 0V-10V (feedback) (-)
	5	Current 0V-10V (feedback) (-)
	6	Voltage 0V-10V (feedback) (+)
	7	Current 0V-10V (feedback) (+)
	8	Switch quantity 2
	9	NC

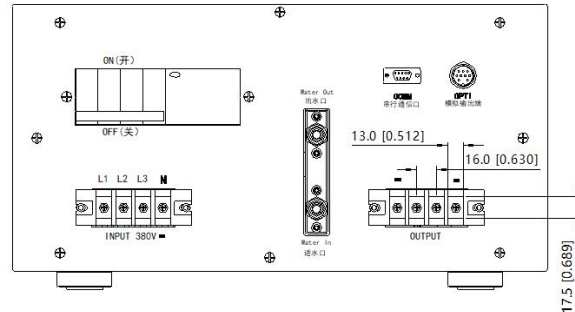
## Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 

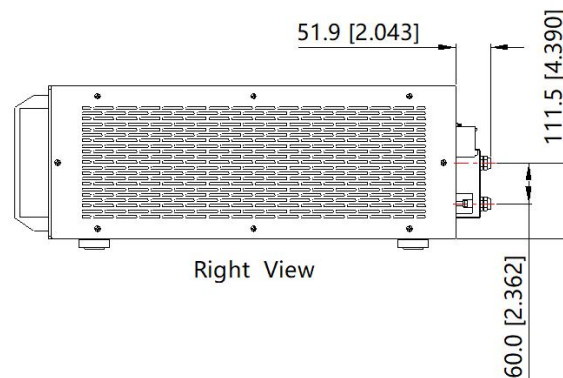


Note:  
Unit: mm[inch]  
General tolerances:  $\pm 5.00[\pm 0.04]$   
The outer diameter of water pipe: 12mm

### Wiring method



Position	Screw Spec.	Torque(max)
L3、L1、L2、N、~、~	M6	5.0 N·m



注：

- For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58240040;
- All index testing methods in this datasheet are based on company corporate standards;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75%RH with nominal input voltage;
- We can provide product customization service, please contact our technicians directly for specific information;
- Please do not install the product in a dangerous area; beware of the risk of electric shock during operating, some modules may generate dangerous voltages (such as power supply wires, output wires);
- It is strictly forbidden to disassemble and assemble the products privately to prevent equipment without failure or malfunction;
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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