SM CREATIVE ELECTRONICS LTD

SMTD2319 Series

Rack mount DC power supply | 1kV-120kV,150/300/600/1200W, 1U/2U

- Output voltage 1kV~120kV Ou Output voltage 1kV~120kV Output voltage 1kV~120kV
- Output power maximum 1200W
- Ripple better than 01% p-p
- Nanosecond-level protection response
- Overvoltage, overcurrent, short circuit, arc and overtemperature protection
- RS-45/RS-232 digital control, isolated digital communication, fiber interface
- Safe interlock function
- Customizable according to user requirements

Introduction:

SMCEL SMTD2319 series is a high-performance, 19-inch standard rack-mountable high-voltage power supply. Maximum output 120kV@1.2kW. It offers selectable polarities, with both output voltage and current continuously adjustable. The output high voltage can achieve a linear and stable rise. Additionally, the SMTD2319 series power supply can be connected to an external potentiometer for remote control of output voltage and current. It also features external voltage and current display, OC, OV and short circuit protection at the high-voltage output terminal, arc protection, and safety interlock functions.

Application:

Accelerator, capacitor charging, electron beam, ion beam, ion implantation, semiconductor manufacturing, lithography technology, electronic component aging, high voltage testing, electrostatic applications, laser, high power RF transmitter, X-ray system, scientific experiments, industrial applications.

Specification:

Input	AC220V±10%,50Hz,6A-10A.
Output	Models available from 1kV to 120kV, model is available in positive, negative or reversible polarity output.
Voltage Control	Local:10-turn potentiometer on front panel Remote:0-10V external corresponding 0 to 100% rated output.
Current Control	Local:10-turn potentiometer on front panel. Remote:0-10V external corresponding 0 to 100% rated output. Digital communication control: the output can be adjusted from 0 to the highest voltage via RS-485 communication interface according to standard Modbus communication protocol. output can be adjusted from 0 to the maximum voltage via optical fiber interface according to standard Modbus Tcp communication protocol.
Voltage Regulation	Load: 0.005% of maximum voltage +500mV for full load change. Line: ±0.005% of full voltage +500mV over specified input range Digital communication control: the output can be adjusted from 0 to the highest voltage via RS-485 communication interface according to standard Modbus communication protocol. output can be adjusted from 0 to the maximum voltage via optical fiber interface according to standard Modbus Tcp communication protocol.
Current Regulation	Load: 0.01% of maximum current ±100μA for full voltage change. Line: ±0.005% of maximum current for a ±10% input line change.
Ripple	0.1%p-p+1 Vrms (0.05%p-p upon request)

Environmental	Operational:0°C to +50°C. Storage:-20°C to +80°C.
Temp. Coefficient	70ppm/°C voltage or current regulated.
Stability	100ppm/hour after 1/2 hour warm-up for both voltage and current regulation.
Humidity	10% to 90% relative humidity, non-condensing.
Dimensions	10W-300W 1kV-70kV:W 482mm, H 44mm, D 482.5mm. 600W – 1200W 80kV-120kV:W 482mm, H 88mm, D 609.6mm.
Connector	DB25 analog interface, RS-485/ RS-232 interface, Ethernet(optional).
Output Cable	3 meters of shielded high voltage cable removable at the rear panel.

OPTION

Optional code	Description
ELOC	HV Cable length（Unit：m）

Table 1.1 Options

All of the options are listed in Table 1.1.See Chapter 4 for details on the action and setup steps. With a few exceptions, these options can be changed quickly within the factory. Please contact SMCEL sales department for price and more details.

Model number description:

Model code represent properties and parameters:

Rated output voltage, unit: kV;

Rated output Power, unit: W;

Polarity: P: positive, N: negative;

SMTD2319 * 120 - 1200

Model | Polarity | Maximum Output Voltage | Maximum Output Power

SMTD2319 selection table: 150W/300W

150 Watt			300 Watt	
kV	mA	Model	mA	Model
1	150	SMTD2318*1-150	300	SMTD2318*1-300
2	75	SMTD2318*2-150	150	SMTD2318*2-300
3	50	SMTD2318*3-150	100	SMTD2318*3-300
6	25	SMTD2318*6-150	50	SMTD2318*6-300
8	18.75	SMTD2318*8-150	37.5	SMTD2318*8-300
10	15	SMTD2318*10-150	30	SMTD2318*10-300
15	10	SMTD2318*15-150	20	SMTD2318*15-300
20	7.50	SMTD2318*20-150	15	SMTD2318*20-300
30	5.00	SMTD2318*30-150	10	SMTD2318*30-300
40	3.75	SMTD2318*40-150	7.5	SMTD2318*40-300
50	3.00	SMTD2318*50-150	6.0	SMTD2318*50-300
60	2.50	SMTD2318*60-150	5.0	SMTD2318*60-300
70	2.10	SMTD2318*70-150	4.28	SMTD2318*70-300
80	1.90	SMTD2318*80-150	3.75	SMTD2318*80-300
100	1.50	SMTD2318*100-150	3.00	SMTD2318*100-300
120	1.25	SMTD2318*120-150	2.50	SMTD2318*120-300

600W/1200W

600 Watt			1200 Watt	
kV	mA	Model	mA	Model
1	600	SMTD2318*1-600	1200	SMTD2318*1-1200
2	300	SMTD2318*2-600	600	SMTD2318*2-1200
3	200	SMTD2318*3-600	400	SMTD2318*3-1200
6	100	SMTD2318*6-600	200	SMTD2318*6-1200
8	75	SMTD2318*8-600	150	SMTD2318*8-1200
10	60	SMTD2318*10-600	120	SMTD2318*10-1200
15	40	SMTD2318*15-600	80	SMTD2318*15-1200
20	30	SMTD2318*20-600	60	SMTD2318*20-1200
30	20	SMTD2318*30-600	40	SMTD2318*30-1200
40	15	SMTD2318*40-600	30	SMTD2318*40-1200
50	12	SMTD2318*50-600	24	SMTD2318*50-1200
60	10	SMTD2318*60-600	20	SMTD2318*60-1200
70	8.6	SMTD2318*70-600	17	SMTD2318*70-1200
80	7.5	SMTD2318*80-600	15	SMTD2318*80-1200
100	6.0	SMTD2318*100-600	12	SMTD2318*100-1200
120	5.0	SMTD2318*120-600	10	SMTD2318*120-1200

INPUT J1:

Pin	Signal	Description
1	L	Live
2	N	Neutral
3	G	Ground

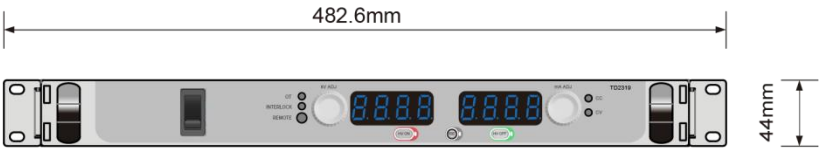
RS-485/RS-232 Interface JB3 (optional):

Pin	Signal	Description
1	A	RS485+
2	G	Ground
3	B	RS485-

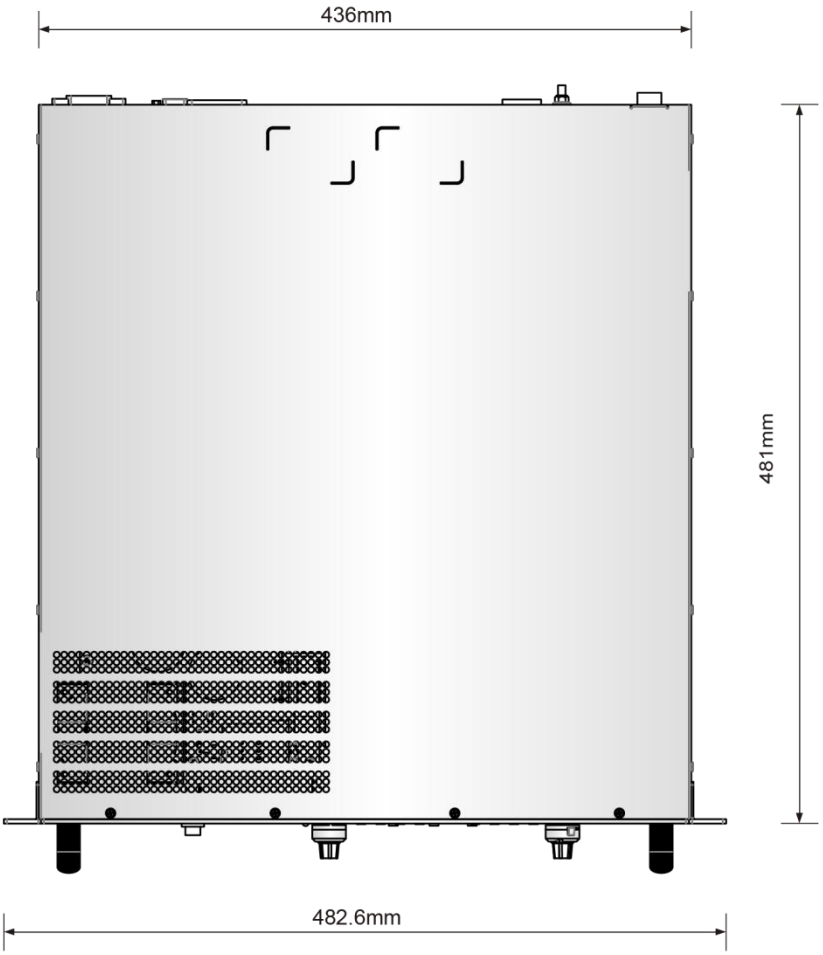
SMTD2319 DB25 Analog Interface JB4:

Pin	Signal	Parameters
1	Remote Indication	Open Collector, Conduction for Remote Control
2	Constant Voltage Indication	Open Collector, Conduction for Constant Voltage Output
3	High Voltage off Indication	Open Collector, Conduction for High Voltage Output Off
4	High Voltage on Signal	The Rising Edge Opens Immediately (+ 15V for Pin17)
5	Remote Enable	High level(+ 15v) is Effective
6	Security Lock Enabled	High level (+ 15V) is Effective
7	+ 15v	+ 15v, 100ma (Max)
8	Current Setting	0 To 10V = 0 to 100% Rated Output
9	Voltage Setting	0 To 10V = 0 to 100% Rated Output
10	+ 15v	+ 15v, 100ma (Max)
11	+ 10v	+ 10v, 1ma (Max)
12	Voltage Display	0 to 10V = 0 to 100% Rated Output
13	Current Display	0 to 10V = 0 to 100% Rated Output
14	Fault Indication	Open Collector, Conduction for Malfunction
15	Constant Current Indication	Open Collector, Conduction for Constant Current Output
16	High Voltage Indication	Open Collector, Conduction for High Voltage On
17	High Voltage off Signal	Falling Edge For High Voltage Off
18	Fault Reset	High level(+ 15V) Is Reset
19	Ground	Signal Ground Wire
20	Ground	Signal Ground Wire
21	Ground	Signal Ground Wire
22	Ground	Signal Ground Wire
23	Ground	Signal Ground Wire
24	Ground	Signal Ground Wire
25	Ground	Signal Ground Wire
Shielding	Ground	Signal Ground Wire

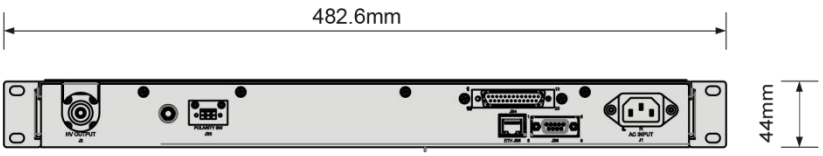
Dimensions: mm



Front View



Top View



Rear View