

TD1220 Verification Device for DC High Voltage & High Value Resistor



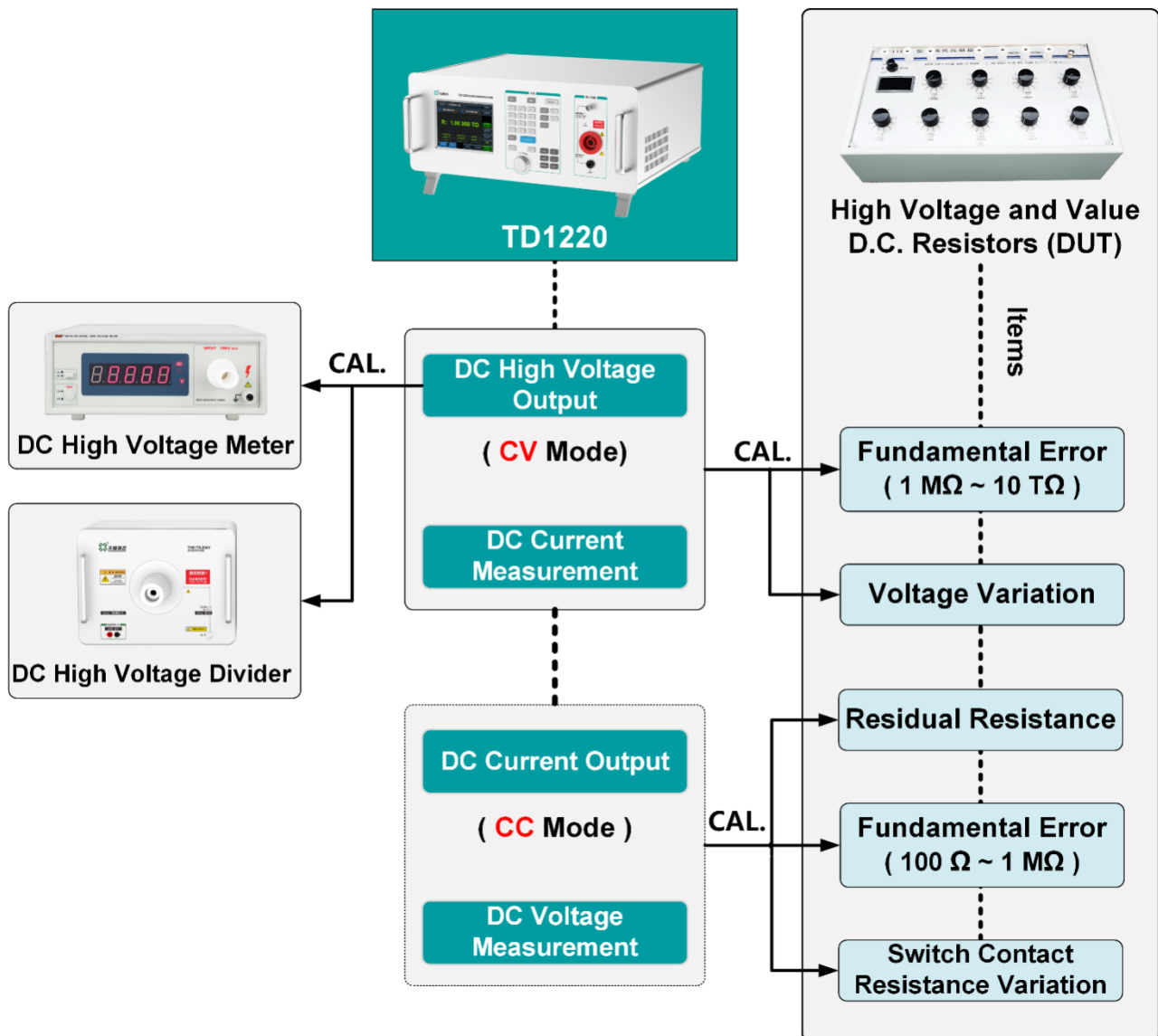
1. Summary

TD1220 applied to calibrate DC high voltage and high resistor, high voltage resistance case, DC high voltage meter, insulation resistance tester verification device (MOHM meter verification device) etc.

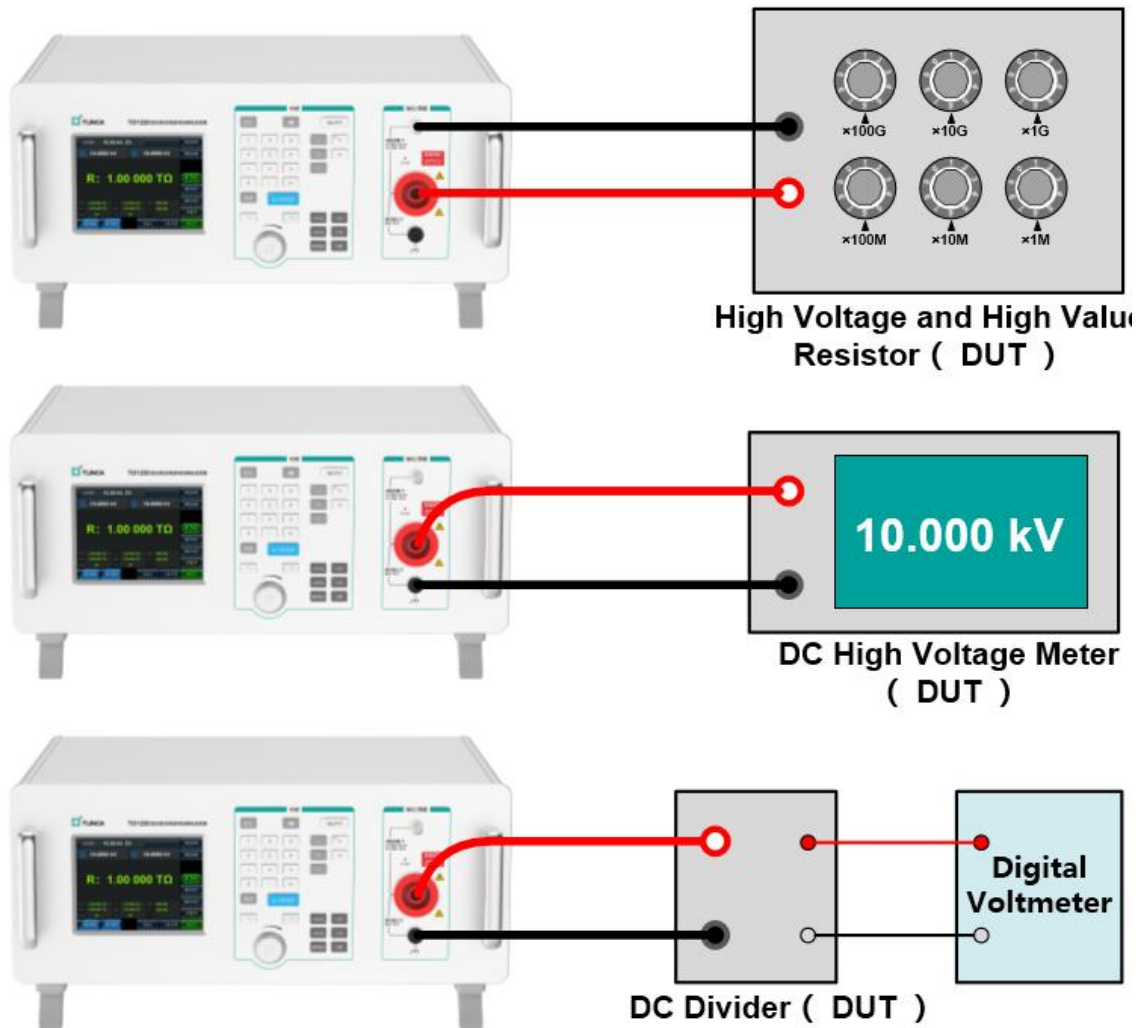
2. Features

- DC high voltage output: 0 ~ 10 kV
- DC small current output: 0 ~ 50 mA
- DC resistance measurement: 100 Ω ~ 2 T Ω (10 T Ω option)
- Accuracy: Class 0.03
- Constant current source (CC) and constant voltage source (CV) modes
- CV mode: suitable for high resistance measurements
- CC mode: suitable for low resistance measurements
- Excellent electrical isolation and protection
- LCD touch screen.
- Setting output values by keys.
- Test software (option)

3. Applications



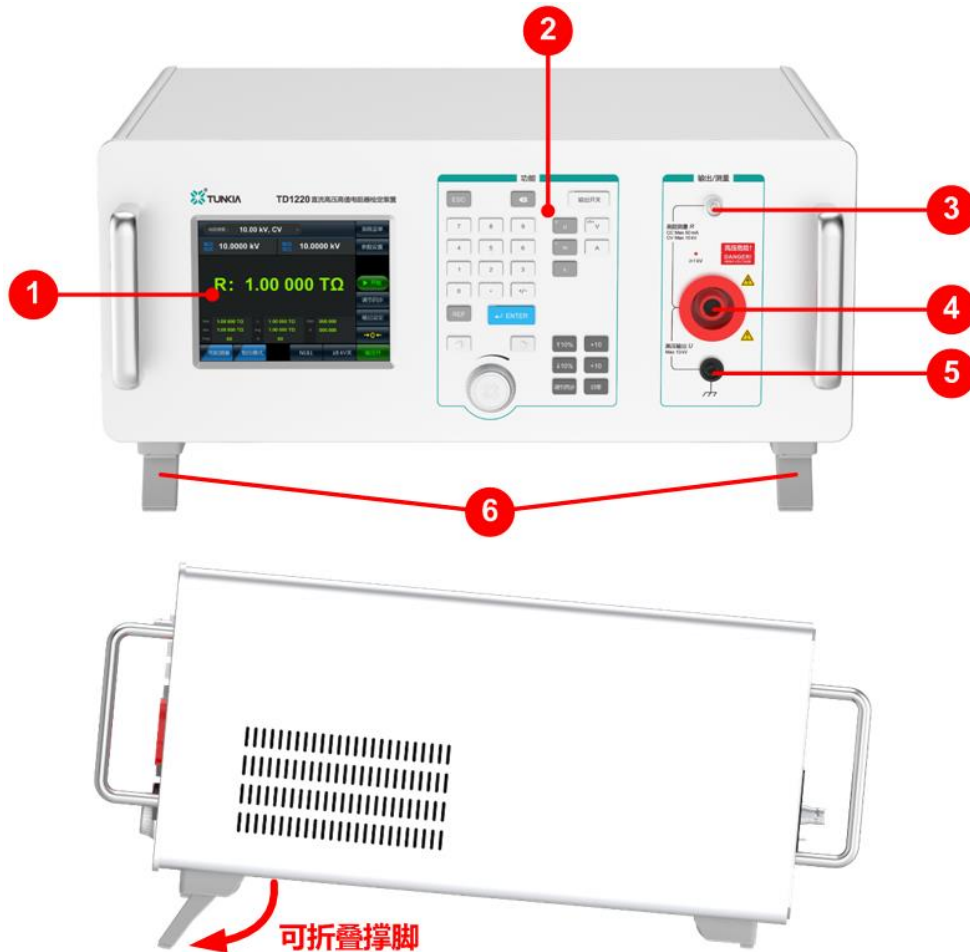
☆ Calibration for DC High Voltage / High Resistance Unit



- **Application 1:** With CV and CC two modes to measure the DC resistance in the wide ranges of $100\Omega \sim 10\text{ T}\Omega$. It can measure the residual resistance, switch contact resistance variation, basic error, voltage variation and other items.
- **Application 2:** It can directly output 1 V to 10 kV DC voltage for calibrating DC high voltage meter.
- **Application 3:** With a digital voltmeter, it can calibrate V/V conversion devices such as DC high voltage dividers, high voltage probes, and voltage transformers.

4. Appearance

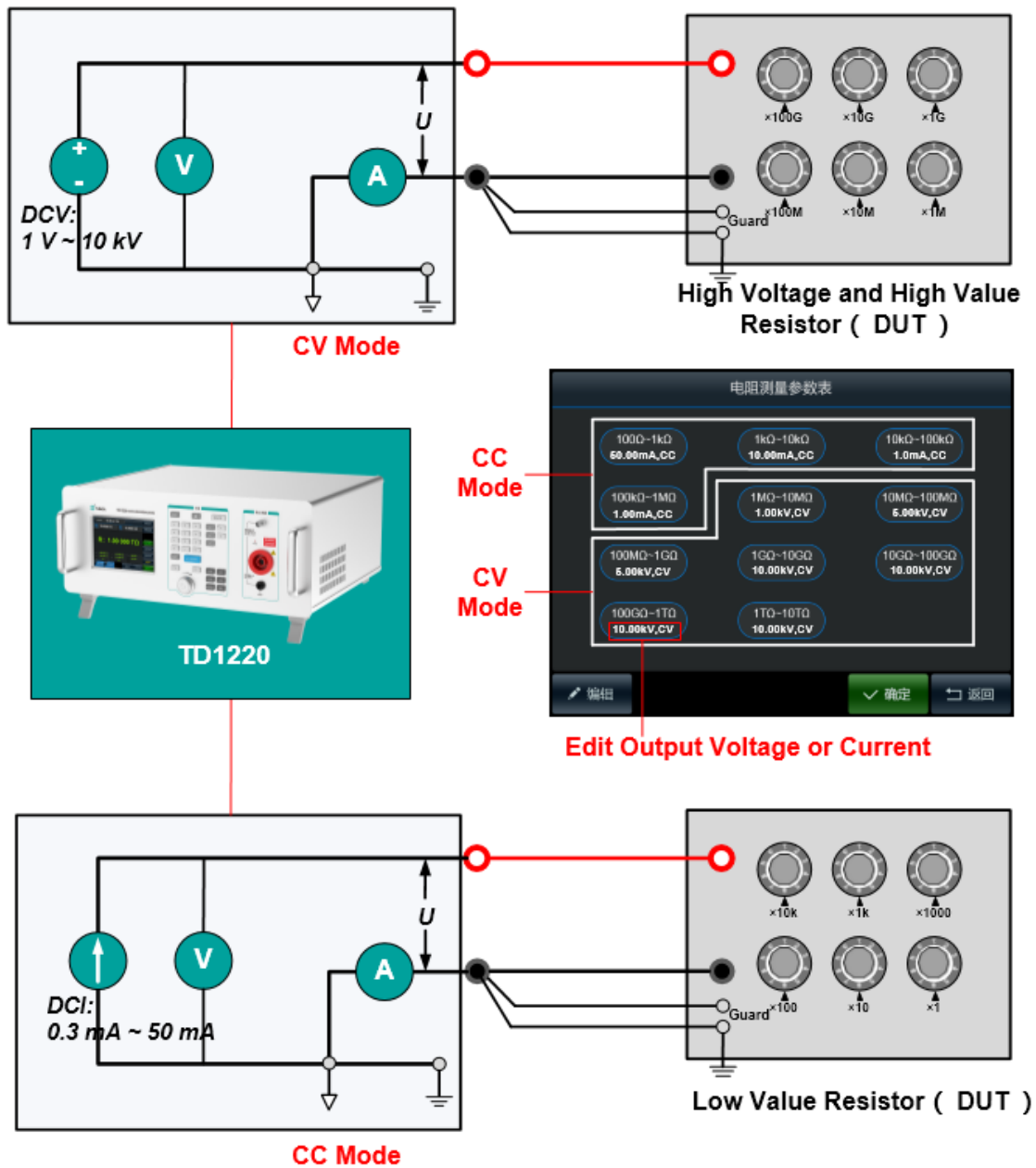
☆ Front Panel



S/N	Description
1	Touchable large-size LCD color screen for easy operation.
2	Keypad for easy setting of standard resistance, output voltage or current.
3	Negative terminal for high resistance measurement
4	High-voltage output terminal, supports up to 10 kV DC high-voltage output.
5	High-voltage output signal reference ground.
6	Foldable feet.

5. Characteristics

☆ CV/CC Mode to Measure DC Resistance



- **CV mode:** TD1210 can output up to 10 kV for high value resistance measurement. Equipotential shield protection design at the low end of output, which can reduce the leakage current and improve the accuracy of measurement.
- **CC mode:** TD1210 can output small current for low resistance measurement, which can help prevent high voltage damage on low resistance disk.
- Users can customize the output voltage or current value according the resistance range.

☆ Statistical Analysis

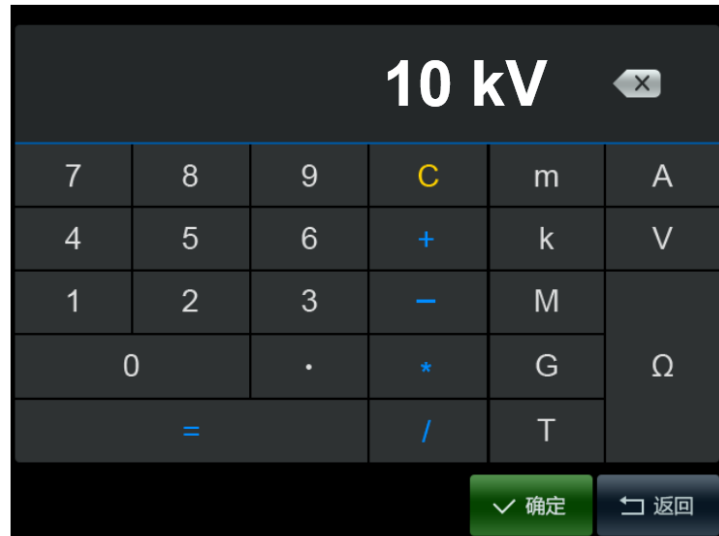


- Data statistical analysis start with start key and test in loop continuously. It shows the max value, min value, peak-peak value, average value, standard variance etc.

★ Multiple Output Mode



Keypad

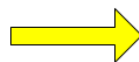


Touch Screen Output

- “**Direct output**” mode, User can set output value by physical key or touch screen.



Rotary Knob



I : 40.000 mA



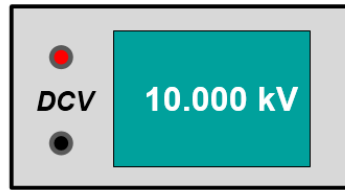
I : 40.100 mA

- “**Rotary Knob**” mode, User can setting in clockwise direction or anticlockwise direction.

★ Multiple Output Mode



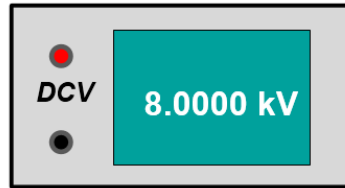
% Setting



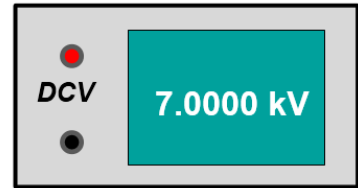
Full Range



90% Range



80% Range



70% Range

⋮

- Touch "**Calibration point**" of screen for "% setting".

6. Specifications

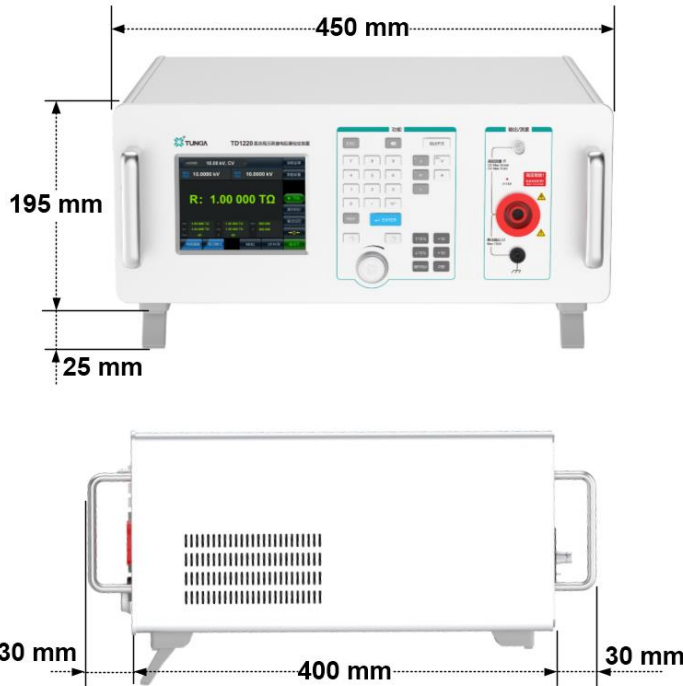
6.1 DC Voltage/Current Output

Type	Range	Resolution	Short-term Stability (% / min)	Measurement Uncertainty (k = 2) (ppm*RD+ppm*RG) ^[1]	Max Burden
DCV	10 V	100 μ V	0.01	120 + 80	50 mA
	100 V	1 mV	0.01	120 + 80	50 mA
	1 kV	10 mV	0.01	120 + 80	50 mA
	10kV	100 mV	0.01	200 + 100	3 mA
DCI	3 mA	10 nA	0.01	120 +80	1000 V
	20 mA	100 nA	0.01	120 +80	1000 V
	50 mA	100 nA	0.01	120 +80	1000 V
Note: [1] RD is the reading value, RG is the range value					

6.2 DC Resistance Measurement

Range (Ω)	Mode	Measurement Uncertainty (k = 2) (%*RD + Ω) ^[2]
$100.000 \leq R \leq 1.000\ 00\ k$	CC / CV	0.02 + 30 m
$1.000\ 00\ k < R \leq 10.000\ 0\ k$	CC / CV	0.02 + 300 m
$10.000\ 0\ k < R \leq 100.000\ k$	CC / CV	0.02 + 3
$100.000\ k < R \leq 1.000\ 00\ M$	CC / CV	0.03 + 30
$1.000\ 00\ M < R \leq 10.000\ 0\ M$	CV	0.05 + 300
$10.000\ 0\ M < R \leq 100.000\ M$	CV	0.05 + 3 k
$100.000\ M < R \leq 1.000\ 00\ G$	CV	0.15 + 30 k
$1.000\ 00\ G < R \leq 10.000\ 0\ G$	CV	0.2 + 300 k
$10.000\ 0\ G < R \leq 100.000\ G$	CV	0.5 + 30 M
$100.000\ G < R \leq 1.000\ 00\ T$	CV	1 + 500 M
$1.000\ 00\ T < R \leq 10.000\ 0\ T^{[2]}$	CV	2.0 + 5 G
Notes:: [2] 10T is option		

7. General Specifications

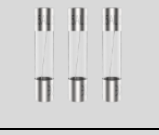
Power Supply	AC (220 ± 22) V, (50 ± 2) Hz
Warm-Up Time	30 minutes
Maximum Power Consumption	100 VA
Temperature Performance	Operating temperature: 0° C~45° C; Storage temperature: -20° C~70° C
Humidity Performance	Operating humidity: < 80% @ 30°C, < 70% @ 40°C, < 40% @ 50°C Storage humidity: (20%~80%) R • H, non-condensing
Altitude	< 3000 m
Weight	Approx. 13.6 kg
Communication Interface	RS 232
Dimensions	450 mm (width) × 400 mm (depth) × 195 mm (height) (excluding handles and feet)
	

8. Ordering Information

TD1220 – 	Max Resistance Measurement	
	Code	Note
	2TR	2 TΩ
	10TR	10 TΩ

e.g. : **TD1220-10TR** note for max resistance measurement to **10 TΩ**.

9. Accessory List

No.	Pic	Name	Specification	Qty	Remark
1		Triaxial Connector	TNC—Φ4 banana plug	1	Standard Accessory
2		High Voltage Test Line	1.5m, Φ4→Φ4 high voltage banana plug	Red 1 Black 1	Standard Accessory
3		Universal Serial Line	USB to RS232	1	Standard Accessory
4		Alligator Clip	Full sheath / Φ4 socket	Red 1 Green 1 Black 1	Standard Accessory
5		Power Line	AC 220V, 10A	1	Standard Accessory
6		Glass Fuse	F3A, 250V	3	Standard Accessory
7		Packing Box	Aluminum alloy box	1	Standard Accessory

No.	Pic	Name	Specification	Qty	Remark
1		Card USB flash drive	Testing software	1	Optional Accessory
2		Portable storage box	—	1	Optional Accessory

Note: The above accessories need to be purchased separately and must be specified in the order contract.