TI1000 Precision AC/DC Voltage Calibrator

1. Summary

TI1000 is an AC\DC voltage source with high stability and precision. it is applied for calibrating digital voltmeters\multimeters on-site, e.g, industrial production lines, etc.

2. Features

- ACV\DCV Output: 10 mV ~ 1020 V
- Standard Version(TI1000-B) and Advanced Version(TI1000-C) are available
- Typical Specifications of the Standard Version(TI1000-B):

  Frequency: DC, AC 45 Hz ~ 2 kHz.

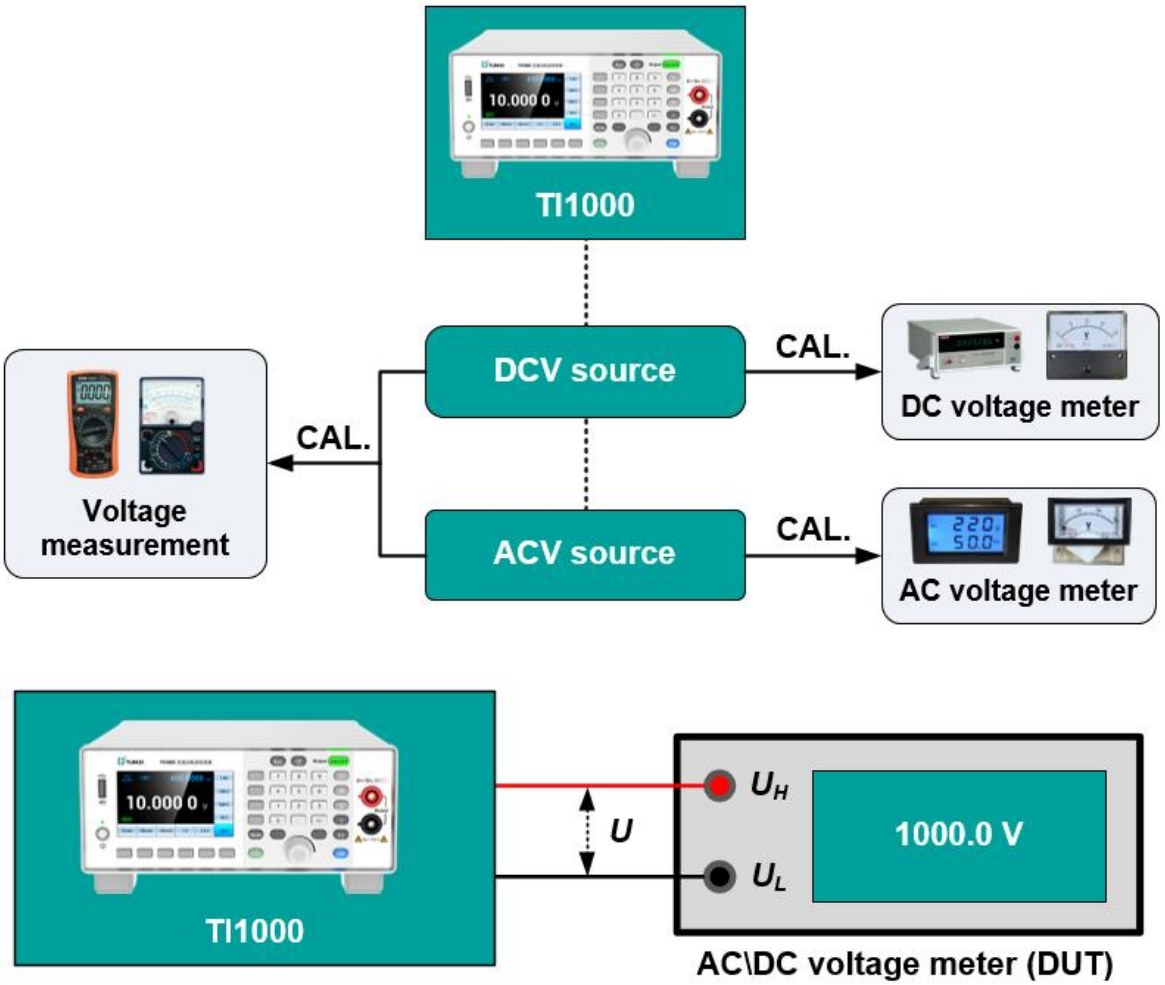
  Optimum Accuracy: DC 100 ppm, AC 200 ppm.
- Typical Specifications of the Advanced Version(TI1000-C):

  Frequency: DC, AC 10 Hz ~ 20 kHz

  Optimum Accuracy: DC 35ppm, AC 100ppm.
- The Maximum Output Power of AC and DC Voltage is up to 10 VA
- Shortcut Output Keys
- Programmable Calibration Schemes
- RS232、LAN and USB Communication Interfaces

3. Application

☆ Calibrate Voltage Measuring Instruments

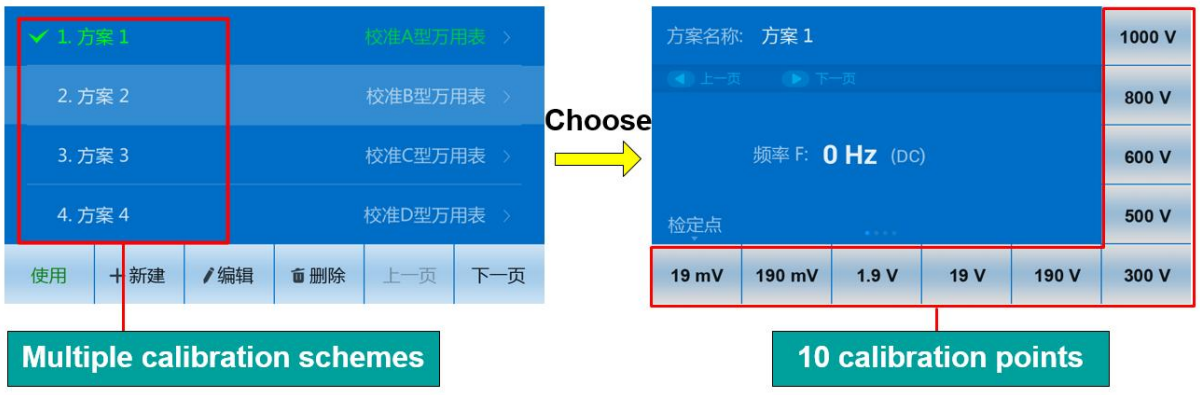


- Suitable for Calibrating AC/DC Voltmeters or Voltage Measurement of Multimeter.

☆ Convenient Operation

- The front panel has 10 shortcut keys that can output the corresponding value on the screen with one key.

☆ Calibration Scheme Setting



- Multiple calibration schemes can be edited and stored for the calibration of multimeter with different specifications.

4. Specifications（TI1000-B）

4.1 DC Voltage

Range	Voltage Output	Resolution	Short-term Stability (%/min)	Accuracy ±(%*RD+mV) [1]	Maximum load [source internal resistance]
300 mV	±(10.0000 mV ~ 330.0000 mV)	100 nV	0.005	0.008 + 0.006	[60 Ω]
3 V	±(0.300000 V ~ 3.300000 V)	1 μV	0.005	0.008 + 0.06	20 mA
30 V	±(3.00000 V ~ 33.00000 V)	10 μV	0.005	0.008 + 0.6	15 mA
300 V	±(30.0000 V ~ 330.0000 V)	100 μV	0.005	0.008 + 6	10 mA
1000 V	±(300.000 V ~ 1020.000 V)	1 mV	0.005	0.008 + 20	10 mA
Note[1]: RD is the reading value, same below.					

- Output Range: ± (10 mV ~ 1020 V)
- 7 Digits Display
- Adjustment Fineness: 0.002%*RG
- Ripple Factor: < 0.1%
- Protection Function: short-circuit protection, overload protection and over-heat protection

4.2 AC Voltage

Range	Voltage Output	Frequency	Resolution	Accuracy ±(%*RD+mV) [1]	Maximum Load [Source Internal Resistance]
300 mV	10.0000 mV ~ 330.0000 mV	45 Hz ~ 400 Hz	100 nV	0.02 + 0.01	[60 Ω]
		400 Hz ~ 2 kHz		0.03 + 0.01	
3 V	0.300000 V ~ 3.300000 V	45 Hz ~ 400 Hz	1 μV	0.02 + 0.1	20 mA
		400 Hz ~ 2 kHz		0.03 + 0.1	
30 V	3.00000 V ~ 33.00000 V	45 Hz ~ 400 Hz	10 μV	0.02 + 1	15 mA
		400 Hz ~ 2 kHz		0.03 + 1	
300 V	30.0000 V ~ 330.0000 V	45 Hz ~ 400 Hz	100 μV	0.02 + 10	10 mA
		400 Hz ~ 2 kHz		0.03 + 10	
1000 V	300.000 V ~ 1020.000 V	45 Hz ~ 400 Hz	1 mV	0.02 + 30	10 mA
		400 Hz ~ 1 kHz		0.03 + 30	

- Output Range: 10 mV ~ 1020 V
- 7 Digits Display
- Adjustment Fineness: 0.002%*RG
- Distortion: < 0.3%
- Protection Function: short-circuit protection, overload protection and over-heat protection

4.3 Sinusoidal Wave Frequency

Range	Resolution	Accuracy ±(%*RD)
45.00000 Hz ≤ F ≤ 99.99999 Hz	10 μHz	0.01
100.0000 Hz ≤ F ≤ 999.9999 Hz	100 μHz	0.01
1.000000 kHz ≤ F ≤ 2.000000 kHz	1 mHz	0.01

5. Specifications（TI1000-C）

5.1 DC Voltage

Range	Voltage Output	Resolution	24 Hour Stability (Tcal±1°C)	Accuracy 1 Year (Tcal±5°C)	Maximum Load [Source Internal Resistance]
			±(ppm*RD+mV)		
100 mV	±(10.0000 mV ~ 110.0000 mV)	100 nV	13 + 0.003	25 + 0.004	[60 Ω]
1 V	±(0.100000 V ~ 1.100000 V)	1 μV	13 + 0.005	25 + 0.01	20 mA
10 V	±(1.00000 V ~ 11.00000 V)	10 μV	13 + 0.05	25 + 0.1	15 mA
100 V	(10.0000 V ~ 110.0000 V)	100 μV	13 + 0.5	25 + 1	10 mA
1000 V	(100.000 V ~ 1020.000 V)	1 mV	13 + 6	25 + 10	10 mA

- Output Range: ± (10 mV ~ 11 V),11 V ~ 1020 V
- 7 Digits Display
- Adjustment Fineness: 0.002%*RG
- Ripple Factor: < 0.1%
- Protection Function: short-circuit protection, overload protection and over-heat protection

5.2 AC Voltage

Range	Voltage Output	Frequency	Resolution	Accuracy 1 Year (Tcal±5°C) ±(ppm*RD+mV)	Maximum Load [Source Internal Resistance]
100 mV	10.0000 mV ~ 110.0000 mV	10 Hz ~ 45 Hz	100 nV	100 + 0.02	[60 Ω]
		45 Hz ~ 2 kHz		60 + 0.02	
		2 kHz ~ 20 kHz		80 + 0.02	
1 V	0.100000 V ~ 1.100000 V	10 Hz ~ 45 Hz	1μV	100 + 0.04	20 mA
		45 Hz ~ 2 kHz		60 + 0.04	
		2 kHz ~ 20 kHz		80 + 0.04	
10 V	1.00000 V ~ 11.00000 V	10 Hz ~ 45 Hz	10 μV	100 + 0.4	15 mA
		45 Hz ~ 2 kHz		60 + 0.4	
		2 kHz ~ 20 kHz		80 + 0.4	
100 V	10.0000 V ~ 110.0000 V	45 Hz ~ 2 kHz	100 μV	60 + 4	10 mA
1000 V	100.000 V ~ 1020.000 V	45 Hz ~ 2 kHz	1 mV	60 + 40	10 mA

- Output Range: 10 mV ~ 1020 V
- 7 Digits Display
- Adjustment Fineness: 0.002%*RG
- Distortion: < 0.3%
- Protection Function: short-circuit protection, overload protection and over-heat protection

5.3 Sinusoidal Wave Frequency

Range [1]	Resolution	Accuracy 1 Year (Tcal±5°C) (%*RD)
10.00000 Hz ≤ F ≤ 99.99999 Hz	10 μHz	0.01
100.0000 Hz ≤ F ≤ 999.9999 Hz	100 μHz	0.01
1.000000 kHz ≤ F ≤ 9.999999 kHz	1 mHz	0.01
10.00000 kHz ≤ F ≤ 20.00000 kHz	10 mHz	0.01

6. General Specifications

Power Supply	AC (220±22) V, (50±2) Hz
Maximum Power Consumption	100 VA
Warm Up Time	Twice the time since last warmed up, to a maximum of 30 minutes.
Operating Environment	0°C ~ 55°C, 30%R·H ~ 80%R·H, non-condensing
Storage Environment	-30°C ~ 70°C, 10%R·H ~ 90%R·H, non-condensing
Communication Interface	USB×1、LAN×1、RS232×1
Dimensions	215 mm (W) × 252 mm (D) ×88 mm(H), feets excluded.
Display	3.5-inch color LCD
Weight	About 5 kg