Micro Signal Type Tester

II. TH199X Series precision source/measure unit

NEW

Features

- 7-inch capacitive touch screen, resolution 800×480
- Linux operating system
- Four-quadrant precision power output and measurement
- Single/dual channel output and measurement
- Up to ±210V DC voltage, ±3A DC current/±10.5A pulse
- 10fA/100nV minimum measurement resolution (6 1/2 digits)
- 10fA/100nV minimum supply resolution (6 1/2 digits)
- Up to 1,000,000 dots/sec sampling rate
- Arbitrary waveform generation
- List scan function (minimum 1μs interval)
- Direct generation of I/V curves of diodes, triodes, MOS tubes and IGBTs

RS232	LAN	HANDER	USB HOST	USB DEVICE
standard	standard	standard	standard	standard

TH199X Series

Shelf volume (mm): 125x132x480
Outline volume (mm): 236x154x526
Net weight: about 6kg (single channel) / 7.5kg (dual channel)

Applications

- Semiconductor, discrete and passive component testing
  - Diodes, Laser Diodes, LEDs
  - Photodetectors, Sensors
  - Field effect transistor, triode
  - ICs (ICs, RFICs, MMICs)
  - Resistors, rheostats, thermistors, switches
- Precision electronics and green energy device testing
  - PV
  - Power semiconductor
  - Battery
  - Car
  - Medical instrument
  - Power and DC Bias Sources for Board Level Testing
- Research and Education
  - New material research
  - Nanodevice properties
  - Giant magnetoresistance
  - Organic equipment
  - Any precision I/V source or measure

Specifications

Model			TH1991C	TH1991B	TH1991A	TH1991	TH1992A	TH1992
Display								
Display			7-inch capacitive touch screen, resolution 800×480					
Key Parameters								
Channel			1	1	1	1	2	2
Max Output	Voltage		±63V	±210V	±210V	±210V	±210V	±210V
	Current	DC	±1.515A	±3.03A	±3.03A	±3.03A	±3.03A	±3.03A
		Impulse	------	------	±10.5A	±10.5A	±10.5A	±10.5A
Power Source	Max Digits	Digits	5 1/2	5 1/2	5 1/2	6 1/2	5 1/2	6 1/2
	Min Resolution	Voltage	1μV	1μV	1μV	100nV	1μV	100nV
		Current	1pA	100fA	1pA	10fA	1pA	10fA
Measurement	Max Digits	Digits	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2
	Min Resolution	Voltage	100nV	100nV	100nV	100nV	100nV	100nV
		Current	100fA	10fA	100fA	10fA	100fA	10fA
Voltage Range			200mV-60V	200mV-200V	200mV-200V	200mV-200V	200mV-200V	200mV-200V
Min Time Interval			50μs	20μs	10μs	1μs	10μs	1μs

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Voltage Source (Accuracy: Reading % + Bias, Noise: peak-to-peak (0.1Hz-10Hz))								
Range	±200mV	Programming Resolution	1μV	1μV	1μV	100nV	1μV	100nV
		Accuracy	±(0.015% + 225μV)					
		Nosie	≤10μV					
		Max Voltage	±210 mV					
	±2V	Programming Resolution	10μV	10μV	10μV	1μV	10μV	1μV
		Accuracy	±(0.02% + 350μV)					
		Nosie	≤20μV					
		Max Voltage	±2.1V					
	±20V	Programming Resolution	100μV	100μV	100μV	10μV	100μV	10μV
		Accuracy	±(0.015% + 5mV)					
		Nosie	≤200μV					
		Max Voltage	±21V					
	±200V	Programming Resolution	1mV	1mV	1mV	100μV	1mV	100μV
		Accuracy	±(0.015% + 50mV)					
		Nosie	≤2mV					
		Max Voltage	±210V					
Voltage Mesaurement (Accuracy: Reding %+ Bias)								
Range	±200mV	Measurement Resolution	100nV					
		Accuracy	±(0.015% + 225μV)					
	±2V	Measurement Resolution	1μV					
		Accuracy	±(0.02% + 350μV)					
	±20V	Measurement Resolution	10μV					
		Accuracy	±(0.015% + 5mV)					
	±200V	Measurement Resolution	100μV					
		Accuracy	±(0.015% + 50mV)					
Current Source (Accuracy: Reading % + Bias, Noise: peak-to-peak (0.1Hz-10Hz))								
Range	±10nA	Programming Resolution	1pA	100fA	1pA	10fA	1pA	10fA
		Accuracy	±(0.10% + 50pA)					
	±100nA	Programming Resolution	1pA	1pA	1pA	100fA	1pA	100fA
		Accuracy	±(0.06% + 100pA)					
	±1μA	Programming Resolution	10pA	10pA	10pA	1pA	10pA	1pA
		Accuracy	±(0.025% + 500pA)					
	±10μA	Programming Resolution	100pA	100pA	100pA	10pA	100pA	10pA
		Accuracy	±(0.025% + 1.5nA)					
	±100μA	Programming Resolution	1nA	1nA	1nA	100pA	1nA	100pA
		Accuracy	±(0.02% + 25nA)					
	±1mA	Programming Resolution	10nA	10nA	10nA	1nA	10nA	1nA
		Accuracy	±(0.02% + 200nA)					
	±10mA	Programming Resolution	100nA	100nA	100nA	10nA	100nA	10nA
		Accuracy	±(0.02% + 2.5μA)					
	±100mA	Programming Resolution	1μA	1μA	1μA	100nA	1μA	100nA
		Accuracy	±(0.02% + 20μA)					
	±1A	Programming Resolution	10μA	10μA	10μA	1μA	10μA	1μA
		Accuracy	±(0.03% + 1.5mA)					
	±1.5A	Programming Resolution	10μA	10μA	10μA	1μA	10μA	1μA
		Accuracy	±(0.05% + 3.5mA)					
	±3A	Programming Resolution	100μA	100μA	100μA	10μA	100μA	10μA
		Accuracy	±(0.4% + 7mA)					
	±10A (Impulse)	Programming Resolution	100μA	100μA	100μA	10μA	100μA	10μA
		Accuracy	±(0.4% + 25mA)					

Current Measurement				
Range	±10 nA	Measurement Resolution		10fA
		Accuracy		±(0.10 % + 50 pA)
	±100nA	Measurement Resolution		100fA
		Accuracy		±(0.06% + 100pA)
	±1 μA	Measurement Resolution		1pA
		Accuracy		±(0.025% + 500pA)
	±10 μA	Measurement Resolution		10pA
		Accuracy		±(0.025% + 1.5nA)
	±100 μA	Measurement Resolution		100pA
		Accuracy		±(0.02% + 25nA)
	±1mA	Measurement Resolution		1nA
		Accuracy		±(0.02% + 200nA)
	±10mA	Measurement Resolution		10nA
		Accuracy		±(0.02% + 2.5 μA)
	±100mA	Measurement Resolution		100nA
		Accuracy		±(0.02% + 20 μA)
	±1A	Measurement Resolution		1 μA
		Accuracy		±(0.03% + 1.5mA)
	±1.5A	Measurement Resolution		1 μA
		Accuracy		±(0.05% + 3.5mA)
	±3A	Measurement Resolution		10 μA
		Accuracy		±(0.4% + 7mA)
	±10A	Measurement Resolution		10 μA
		Accuracy		±(0.4% + 25mA)
Pulse source (pulse width refers to the time from 10% rising edge to 90% falling edge, base level: pulse low level, peak level: pulse high level)				
Minimum programmable pulse width				50 μs
Pulse width programming resolution				1 μs
Max Voltage of DC or Impulse	210V	Max Peak Current		0.105A
		Max Base Current		0.105A
		Impulse Width		50 μs - 99999.9s
		Max Duty Cycle		99.9999%
	21V	Max Peak Current		1.515A
		Max Base Current		1.515A
		Impulse Width		50 μs - 99999.9s
		Max Duty Cycle		99.9999%
	6V	Max Peak Current		3.03A
		Max Base Current		3.03A
		Impulse Width		50 μs - 99999.9s
		Max Duty Cycle		99.9999%
Impulse Only	200V	Max Peak Current		1.515A
		Max Base Current		50mA
		Impulse Width		50 μs - 2.5ms
		Max Duty Cycle		2.5%
	180V	Max Peak Current		1.05A
		Max Base Current		50mA
		Impulse Width		50 μs - 10ms
		Max Duty Cycle		2.5%
	6V	Max Peak Current		10.5A
		Max Base Current		0.5A
		Impulse Width		50 μs - 1ms
		Max Duty Cycle		2.5%

Resistance Measurement (Auto resistance measurement mode, 4-wire, 2V range)			
Range	2 Ω	Resolution	1 μ Ω
		Test Current	1 A
		Current Range	1 A
		Total Tolerance	0.2% + 0.00035 Ω
	20 Ω	Resolution	10 μ Ω
		Test Current	100mA
		Current Range	100mA
		Total Tolerance	0.06% + 0.0035 Ω
	200 Ω	Resolution	100 μ Ω
		Test Current	10mA
		Current Range	10mA
		Total Tolerance	0.065% + 0.035 Ω
	2k Ω	Resolution	1m Ω
		Test Current	1mA
		Current Range	1mA
		Total Tolerance	0.06% + 0.35 Ω
	20k Ω	Resolution	10m Ω
		Test Current	100 μ A
		Current Range	100 μ A
		Total Tolerance	0.065% + 3.5 Ω
	200k Ω	Resolution	100m Ω
		Test Current	10 μ A
		Current Range	10 μ A
		Total Tolerance	0.06% + 35 Ω
	2M Ω	Resolution	1 Ω
		Test Current	1 μ A
		Current Range	1 μ A
		Total Tolerance	0.095% + 350 Ω
	20M Ω	Resolution	10 Ω
		Test Current	100nA
		Current Range	100nA
		Total Tolerance	0.18% + 3.5k Ω
	200M Ω	Resolution	10 Ω
		Test Current	10nA
		Current Range	10nA
		Total Tolerance	1.08% + 35k Ω
Interface			RS232C、USB HOST、USB DEVICE、LAN、HANDLER
Environment and Temperature			
Operation temperature and humidity range			23° C±5° C
Storage temperature and humidity range			23° C±5° C
Accuracy guarantees temperature and humidity			23° C±5° C
Preheat time			60 Minutes
Ambient temperature change			30% to 80%RH
Calibration cycle			One year
General Parameter			
Power Supply			90 V to 264 V, 47 Hz to 63 Hz, 250 VA maximum
Power			31.8W
Shelf Size			125mmx132mmx480mm
Dimensions			236mmx154mmx526mm
Weight			About 6kg (Single Channel) / 7.5kg (Dual Channel)