Digit Multimeter

H. TH1951/TH1961 Digit Multimeter

Features

- TH1951 5 1/2 digit display(119,999 counts)
  TH1961 6 1/2 digit display(1,199,999 counts)
- 12 different measurement capabilities: DCV/ACV, DCI/ACI, Ω2W/Ω4W,Frequency/Period, Diode Test, Continuity, dB/dBm
- High brightness vacuum fluorescent display
- True-rms AC voltage and current measurement, bandwidth up to 100kHz(TH1951)/300kHz(TH1961)
- DCV measurement accuracy up to 0.0035%, resolution up to 0.1uV
- Max. measurement rate: 1000 meas/sec
- Equal accuracy frequency measurement up to 1.1MHz
- Relative mode(REL) to eliminate residual reading
- 2 W, 4W resistance measurement mode selectable
- Built-in mX +b,%, dB, dBm etc. mathematics calculation function
- 512 readings storage and MAX/MIN/AVER/STD statistics
- Up to 30,000 readings storage(without statistics)
- HI/IN/LO comparator function
- USB, BPIB and RS-232 Interfaces provide easy system communication
- Calibration without opening the case
- 10 sets of multimeter setup can be stored and loaded

CE

TH1951/TH1961

The TH1951/TH1961 5 1/2, 6 1/2 digit multimeter can test voltage/ current/resistance fast and accurately. Its outstanding performance, such as max.1,200,000 counts, high reading rate1000 meas/sec as well as DC voltage accuracy of 0.0035% provides an ideal cost-effective option for customer.

The concise design of front panel of TH1951/TH1961 makes it easier to locate and select the measurement function. High brightness VFD display allows the user to view clearly. Its 12 different measurement functions, including DCV/ACV, DCI/ACI, Ω 2W/Ω 4W, Frequency/Period, Diode Test, Continuity, dB/dBm, cover all basic measurement needs.

Many new technologies have been adopted in TH1951/ TH1961, such as high speed low noise 26 bits A/D converter which gives the good linear and low noise performances. Fast response servo amplifier, floating power source and low offset buffer amplifier constitute front end of servo so as to remove the traditional attenuation, reduce offset drifting as well as to increase measurement rate. The SMD in the multimeter reduces the system density and volume.

TH1951/TH1961 adopts special input overload protect circuit which can stand 1500V voltage between input and ground. When overloaded, it can recover fast so as to ensure the safety and reliability of the equipment.

Standard GPIB, USB(or RS-232) interface with universal communication software is used with TH1951/TH1961 for easy communication, data analysis and statistics as well as construction of an automatic measurement system. The system accepts SCPI (standard commands for programmable instrument) command sets. It is compatible in communication software

Test function	
Test parameter	DCV, ACV, DCI, ACI, Ω2W, Ω4W, FREQ, PERI DIODE , CONT
Mathematics function	mX+b, %, dB, dBm, REL
Range	Auto, Manual
Display	VFD
Trigger Mode	INT/MAN/BUS/EXT
Programmable Time Delay	0 − 6000mS
Reading storage and statistics	2 to 512 readings can be stored, loaded and counted Type of statistics: MAX、MIN、AVER、STD
Reading Hold	To find out best stable reading for each data block of the given reading number according to the given accuracy.
Limitation measurement	To judge HI、IN、LO and display, with ALARM for HI/LO
Setup storage	10 setup files can be stored and loaded
Calibration	Recommend Fluke5520A with TH1951 /TH1961 Accuracy Calibration software (option)
Communication interface	SCPI command support for GPIB(optional), RS232(optional) and USB(standard) interface

Specifications

Measurement condition

Calibration interval: one year
Operation Humidity:18°C−28°C , ≤90%RH;
When resistor range is 10M and 100M, ≤70%RH
Warming up time: 30 min
Accuracy is expressed as: +/-(% of reading +% of range)
Temperature coefficient: 0°C--18°C & 28°C--40°C,+0.1%×accuracy /°C

Following is the specification at slow mode, others please refer the operation manual .

Full Scale Reading digits and Reading Rate (meas/sec)

Rate		Slow		Med	Fast
		TH1951	TH1961		
Full scale reading (digits)		119,999	1,199,999	119,999	11,999
Reading rate (meas/sec)	DC V,DC I	4	2	16	57
	AC V,AC I	3	1.5	4	25
	Ω 2W	4	2	16	57
	Ω 4W	3	1.5	10	33

DC V

Range		Max. reading	Resolution	Accuracy	Input impedance
TH1951	100mV	119.999	1μV	0.02+0.008	>10GΩ
	1V	1.19999	10μV	0.01+0.004	>10GΩ
	10V	11.9999	100μV	0.01+0.004	>10GΩ
	100V	119.999	1mV	0.01+0.004	10MΩ
	1000V	1010.00	10mV	0.01+0.004	10MΩ
TH1961	100mV	119.9999	0.1μV	0.0065+0.0045	>10GΩ
	1V	1.199999	1μV	0.0040+0.0009	>10GΩ
	10V	11.99999	10μV	0.0035+0.0005	>10GΩ
	100V	119.9999	100μV	0.0045+0.0006	10MΩ
	1000V	1010.000	1mV	0.0055+0.0015	10MΩ

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DC I					
Range		Max. reading	Resolution	Accuracy	Burden voltage/ shunt resistor
TH1951	10mA	11.9999	0.1μA	0.05+0.008	<0.15V/10.1Ω
	100mA	119.999	1μA	0.05+0.004	<1.5V / 10.1Ω
	1A	1.19999	10μA	0.10+0.004	<0.3V / 0.1Ω
	10A	11.9999	100μA	0.25+0.004	<0.15V/10mΩ
TH1961	10mA	11.99999	10nA	0.05+0.004	<0.15V/10.1Ω
	100mA	119.9999	0.1μA	0.05+0.004	<1.5V / 10.1Ω
	1A	1.199999	1μA	0.08+0.004	<0.3V / 0.1Ω
	10A	11.99999	10μA	0.25+0.004	<0.15V / 10mΩ

AC V						
Range		100mV	1V	10V	100V	750V
TH1951	Max. reading	119.999	1.19999	11.9999	119.999	757.5
	Resolution	1μV	10μV	100μV	1mV	10mV
	10~20 Hz	1.5+0.1				
	20~50 Hz	0.5+0.1				
	50Hz~20 kHz	0.1+0.1				
	20~50 kHz	0.3+0.15	0.3+0.1			
	50~100 kHz	1+0.15	1+0.1			
TH1961	Max. reading	119.9999	1.199999	11.99999	119.9999	757.50
	Resolution	0.1μV	1μV	10μV	100μV	1mV
	10~20 Hz	1.50+0.20				
	20~50 Hz	0.50+0.10				
	50Hz~100 Hz	0.10+0.03				
	100~20kHz	0.05+0.03			0.08+0.03	
	20~50 kHz	0.15+0.05	0.11+0.05		0.18+0.05	------
	50~100kHz	0.60+0.08				------
	100~300kHz	4.00+0.05			------	------

AC I				
TH1951	Range	10mA	1A	10A
	Max. reading	11.9999	1.19999	11.9999
	Resolution	0.1μA	10μA	100μA
	10Hz~20 Hz	1+0.08		---
	20Hz~50 Hz	0.5+0.08		---
	50Hz~2 kHz	0.25+0.08		---
	2 kHz~10 kHz	2+0.08		---
	Burden voltage/ shunt Resistor	<0.15V/10Ω	<0.3V/0.1Ω	<0.15V/10mΩ
TH1961	Range	10mA	1A	10A
	Max. reading	11.99999	1.199999	11.99999
	Resolution	10nA	1μA	10μA
	10Hz~20 Hz	1.50+0.10		1.60+0.10
	20Hz~50 Hz	0.50+0.03		0.60+0.30
	50Hz~100Hz	0.10+0.3	0.12+0.03	0.15+0.03
	100Hz~2 kHz	0.05+0.03	0.10+0.04	0.12+0.04
	2kHz~5 kHz	0.10+0.03	0.50+0.03	0.60+0.05
	5kHz~10 kHz	0.20+0.03	2.00+0.10	2.50+0.10
	Burden voltage/ shunt Resistor	<0.15V/10Ω	<0.3V/0.1Ω	<0.15V/10mΩ

Ω 2W/Ω 4W					
Range		Max. reading	Resolution	Measurement current	Accuracy
TH1951	100 Ω	119.999	1mΩ	1 mA	0.05+0.008
	1 kΩ	1.19999	10mΩ	1 mA	0.03+0.004
	10 kΩ	11.9999	100mΩ	100μA	0.03+0.004
	100 kΩ	119.999	1Ω	10μA	0.03+0.004
	1 MΩ	1.19999	10Ω	10μA	0.03+0.004
	10 MΩ	11.9999	100Ω	7.0×Rx/ (10M+Rx)	0.1+0.004
	100 MΩ	119.999	1KΩ	7.0×Rx/ (10M+Rx)	0.5+0.008
TH1961	100 Ω	119.9999	100μΩ	1 mA	0.010+0.004
	1 kΩ	1.199999	1mΩ	1 mA	0.010+0.001
	10 kΩ	11.99999	10mΩ	100μA	0.010+0.001
	100 kΩ	119.9999	100m Ω	10μA	0.010+0.001
	1 MΩ	1.199999	1Ω	10μA	0.010+0.001
	10 MΩ	11.99999	10Ω	7.0×Rx/ (10M+Rx)	0.040+0.001
	100 MΩ	119.9999	100Ω	7.0×Rx/ (10M+Rx)	0.800+0.010

Frequency					
Range		Max. reading	Resolution	Accuracy	Sensitivity (sine wave)
TH1951	5Hz~10 Hz	9.99999	10μHz	0.05+0.1	200mV rms
	10Hz~100Hz	99.9999	100μHz	0.01+0.01	40mV rms
	100Hz~100 kHz	999.999	1mHz	0.005+0.002	40mV rms
	100k~1.1MHz	1099.99	1Hz	0.005+0.002	100mV rms
TH1961	5Hz~10 Hz	9.999999	1μHz	0.05+0.1	200mV rms
	10Hz~100Hz	99.99999	10μHz	0.01+0.01	40mV rms
	100Hz ~100 kHz	999.9999	10mHz	0.005+0.002	40mV rms
	100k~1.1MHz	1099.999	0.1Hz	0.005+0.002	100mV rms

General Specifications

Operating Temperature and Humidity		0°C~40°C, ≤90%RH
Power Requirements	Voltage	99V~121V AC ,198V~242V AC
	Frequency	47.5Hz~63Hz
Power Consumption		20 VA max.
Dimensions (W×H×D)		277mmx115mmx365mm
Weight		2.5 kg Approx.

Ordering Information

TH1951 5 1/2 Digit Multimeter
TH1961 6 1/2 Digit Multimeter

Instrument Accessories

TH26036 test leads one pair (black and red)
Power cord

Options

TH10003 GPIB interface board
TH12023 RS232C control software
TH26041 Glided shorting plate
TH26039 4 terminal Kelvin test clip
TH26040 SMD component test clip
TH12022 Accuracy Calibration software