

Digit Multimeter

H. TH1941/TH1942 Digit Multimeter



TH1942

Features

- 21,000/51,000-count display
- Large-screen dual-display VFD with high brightness
- True RMS AC voltage and current measurements, bandwidth up to 100kHz
- Measurement functions, including DCV/ACV, DCI/ACI, Ω , frequency/period, diode, Continuity, dBm, dB, etc.
- Parameters, such as AC+DC, AC+Hz, Readout+d B, Readout+d B m, displayed synchronously
- Measurement speed up to 25 meas/sec
- DCV accuracy up to 0.02%, resolution up to 10 μ V
- Measured value displayed in the form of percentage
- Relative mode (REL) to eliminate residual reading
- Calibration without opening the case
- Limit function (HI/IN/LO) for fast sorting
- Equipped RS232C communication interface providing convenient system communication

Brief Introduction

■ TH1941 4 1/2-digit true-RMS digital multimeter and TH1942 50,000-count digital multimeter are voltage, current, resistance tester with multi functions and low cost. The instrument can stably perform measurement at high speed as several times as competitive instruments in this class. It provides excellent performance, such as maximum reading of 21,000/51,000 counts, maximum DC voltage accuracy of 0.02%, and low cost to give you a best choice.

Having VFD dual-display with high brightness, TH1941/TH1942 can synchronously display measurement parameters, such as AC/DC voltage or current, AC voltage/current and frequency to improve measurement efficiency and display results clearly. The instrument is equipped with SMD component inside to reduce density and physical size.

The instrument comes standard with RS232C communication interface and common communication software is optional to meet the need of communication with computer, data analysis and statistics, and building up automatic test system. The instrument accepts SCPI command to ensure compatibility of communication software.



Measurement Functions

Measurement Parameters	DC/AC Voltage, DC/AC Current, Resistance, Frequency, Period, Continuity, Diode
Math function	%, dB, dBm, REL
Range	Auto, Manual
Display	VFD, dual display
Reading mode	Single display: all measurement parameters Dual display: ACV+DCV, ACI+DCI, ACV+Hz, ACI+Hz, Readout+dB/dBm, Readout+Max/Min
Trigger mode	INT/MAN/BUS
Reading hold	TO find out the best stable reading for each data block of the given reading number according to given accuracy
Comparator	To judge HI, IN, LO and display, with ALARM at HI/LO (selectable)
Interface	RS232C (only TH1942), supporting SCPI command

General Specifications

Working temperature & humidity		0°C-40°C, \leq 90%RH
Power supply	Voltage	198V-242VAC, 99V-121VAC
	Frequency	47.5Hz-63Hz
Power consumption		\leq 10 VA
Dimensions (W×H×D)		277mm×115mm×340mm
Weight		Approx. 2.2 kg

Ordering Information

TH1941 4 1/2 Digit Multimeter
TH1942 50000 count Digit Multimeter

Instrument Accessories

TH26036 1 pair of test lead (red and black)
3 cord power line (According to different regions)

Options

TH26034 RS232C interface connection cable
TH12025 RS232C communication software
TH12024 Accuracy calibration software

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Measurement condition

Calibration cycle: 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 .

Model	TH1941					TH1942											
Speed (counts/second)	Slow	Middle	Fast	Slow	Middle	Fast	Slow	Middle	Fast	Slow	Middle	Fast					
DCV,DCI	5	10	25	5	10	25	5	10	25	5	10	25					
ACV,ACI	5	10	25	5	10	25	5	10	25	5	10	25					
Ω	5	10	25	5	10	25	5	10	25	5	10	25					
AC+DC	1.2	1.4	1.5	1.2	1.4	1.5	1.2	1.4	1.5	1.2	1.4	1.5					
Freq	1	2	3.9	1	2	3.9	1	2	3.9	1	2	3.9					
DC voltage	Max. reading	Resolution	Accuracy	Input impedance	Max. reading	Resolution	Accuracy	Input impedance	Max. reading	Resolution	Accuracy	Input impedance					
Range	200mV/500mV	210.00	10μV	0.03+0.04	10MΩ	510.00	10μV	0.02+0.016	10MΩ	510.00	10μV	0.02+0.016	10MΩ				
	2V/5V	2.1000	100μV	0.03+0.02	11.1MΩ	5.1000	100μV	0.02+0.008	11.1MΩ	5.1000	100μV	0.02+0.008	11.1MΩ				
	20V/50V	21.000	1mV	0.03+0.02	10.1MΩ	51.000	1mV	0.02+0.008	10.1MΩ	51.000	1mV	0.02+0.008	10.1MΩ				
	200V/500V	210.00	10mV	0.03+0.02	10MΩ	510.00	10mV	0.02+0.008	10MΩ	510.00	10mV	0.02+0.008	10MΩ				
	1000V	1200.00	100mV	0.03+0.02	10MΩ	1200.00	100mV	0.02+0.008	10MΩ	1200.00	100mV	0.02+0.008	10MΩ				
DC current	Max. reading	Resolution	Accuracy	Load voltage/ shunt resistance	Max. reading	Resolution	Accuracy	voltage /shunt	Max. reading	Resolution	Accuracy	voltage /shunt					
Range	2mA/5mA	2.1000	0.1μA	0.08+0.025	<0.3V/100Ω	5.1000	0.1μA	0.05+0.010	<0.6V/100Ω	5.1000	0.1μA	0.05+0.010	<0.6V/100Ω				
	20mAV/50mA	21.000	1μA	0.08+0.020	<0.04V / 1Ω	51.000	1μA	0.05+0.008	<0.06V / 1Ω	51.000	1μA	0.05+0.008	<0.06V / 1Ω				
	200mA/500mA	210.00	10μA	0.08+0.020	<0.3V / 1Ω	510.00	10μA	0.05+0.008	<0.6V / 1Ω	510.00	10μA	0.05+0.008	<0.6V / 1Ω				
	2A/5A	2.1000	100μA	0.3+0.025	<0.05V / 10mΩ	5.1000	100μA	0.25+0.010	<0.1V / 10mΩ	5.1000	100μA	0.25+0.010	<0.1V / 10mΩ				
	20A	20.000	1mA	0.3+0.025	<0.6V / 10mΩ	20.000	1mA	0.25+0.010	<0.6V / 10mΩ	20.000	1mA	0.25+0.010	<0.6V / 10mΩ				
AC voltage	200mV	2V	20V	200V	750V	500mV	5V	50V	500V	750V	500mV	5V	50V	500V	750V		
Resolution	10μV	100μV	1mV	10mV	100mV	10μV	100μV	1mV	10mV	100mV	10μV	100μV	1mV	10mV	100mV		
Accuracy	20~50 Hz	1.0+0.2		-----	1.0+0.08		-----		1.0+0.08		-----		1.0+0.08		-----		
	50~20 kHz	0.5+0.15	0.4+0.05	-----	0.8+0.075	0.5+0.06	0.35+0.02	-----	0.5+0.06	0.35+0.02	-----	0.5+0.06	0.35+0.02	-----	0.5+0.03	-----	
	20k~50 kHz	1.8+0.25		1.5+0.10		1.5+0.1		1.00+0.04		1.5+0.1		1.00+0.04		1.5+0.1		1.00+0.04	
	50k~100 kHz	3.0+0.75		3.0+0.25		3.0+0.3		3.0+0.1		3.0+0.3		3.0+0.1		3.0+0.3		3.0+0.1	
AC current	2mA	20mA	200mA	2A	20A	5mA	50mA	500mA	5A	50A	500mA	5A	50A	500mA	5A	50A	
Resolution	0.1μA	1μA	10μA	100μA	1mA	0.1μA	1μA	10μA	100μA	1mA	0.1μA	1μA	10μA	100μA	1mA	10μA	
Accuracy	20~50 Hz	1.50+0.5		2.00+0.5		1.50+0.16		2.00+0.16		1.50+0.16		2.00+0.16		1.50+0.16		2.00+0.16	
	50~2 kHz	0.5+0.3		0.5+0.3		0.5+0.08		0.5+0.1		0.5+0.08		0.5+0.1		0.5+0.08		0.5+0.1	
	2k~20 kHz	2+0.5	2+0.38	-----	-----	2+0.16	2+0.12	-----	-----	2+0.16	2+0.12	-----	-----	2+0.16	2+0.12	-----	
Load voltage/shunt resistance	Same as DC current					Same as DC current											
Resistance	Max. reading	Resolution	Test current	Accuracy	Max. reading	Resolution	Test current	Accuracy	Max. reading	Resolution	Test current	Accuracy					
Range	200Ω/500Ω	210.00	10mΩ	0.5 mA	0.10+0.05	510.00	10mΩ	0.5 mA	0.10+0.010	510.00	10mΩ	0.5 mA	0.10+0.010				
	2 kΩ/5 kΩ	2.1000	100mΩ	0.45 mA	0.10+0.025	5.1000	100mΩ	0.45 mA	0.10+0.008	5.1000	100mΩ	0.45 mA	0.10+0.008				
	20 kΩ/50 kΩ	21.000	1Ω	45μA	0.10+0.025	51.000	1Ω	45μA	0.10+0.008	51.000	1Ω	45μA	0.10+0.008				
	200 kΩ/500 kΩ	210.00	10 Ω	4.5μA	0.10+0.025	510.00	10 Ω	4.5μA	0.10+0.008	510.00	10 Ω	4.5μA	0.10+0.008				
	2MΩ/5 MΩ	2.1000	100 Ω	450nA	0.15+0.025	5.1000	100 Ω	450nA	0.15+0.008	5.1000	100 Ω	450nA	0.15+0.008				
	20MΩ/50 MΩ	21.000	1kΩ	45nA	0.30+0.05	51.000	1kΩ	45nA	0.30+0.010	51.000	1kΩ	45nA	0.30+0.010				
Frequency	Max. reading	Resolution	Accuracy	Sensitivity	Max. reading	Resolution	Accuracy	Sensitivity	Max. reading	Resolution	Accuracy	Sensitivity					
Range	5~10Hz	9.9999	0.0001Hz	0.05+0.02	200mV rms	9.9999	0.0001Hz	0.05+0.02	200mV rms	9.9999	0.0001Hz	0.05+0.02	200mV rms				
	10~100Hz	99.999	0.001Hz	0.01+0.02	300mV rms	99.999	0.001Hz	0.01+0.02	300mV rms	99.999	0.001Hz	0.01+0.02	300mV rms				
	100~100kHz	999.99	0.1Hz	0.01+0.008	300mV rms	999.99	0.1Hz	0.01+0.008	300mV rms	999.99	0.1Hz	0.01+0.008	300mV rms				
	100k~1MHz	9999.9	10Hz	0.01+0.008	500mV rms	9999.9	10Hz	0.01+0.008	500mV rms	9999.9	10Hz	0.01+0.008	500mV rms				