Agilent U1250 Series Handheld Digital Multimeters

Data Sheet

Test more – more safely



The Agilent U1250 Series handheld digital multimeters (DMMs) exceed your expectations by delivering powerful features and performance that meet your toughest requirements and applications. The series' latest multimeters, the U1251B, U1252B and U1253B come in vivid orange cases, offering capabilities and functions equivalent to the U1250A Series.

Key features

- Superior contrast from organic LED (OLED) display[1]
- 50,000-count dual display
- Up to 0.025% basic DCV accuracy
- True-RMS AC and AC+DC[2] measurements
- K-type and J-type[2] temperature measurements
- Manual and automated (interval) data logging; internally to DMM and externally to PC
- CAT III 1000 V and CAT IV 600 V safety protection
- Built-in 20-MHz frequency counter[2]
- Built-in programmable square-wave generator[2]

[1] U1253A/U1253B model
[2] U1252A/U1252B/U1253A/U1253B models

Do more with just one instrument

The basic model, U1251A/U1251B, expands your capabilities beyond typical DMM measurements to include data logging. The U1252A/U1252B starts with the same foundation, and then adds a 20-MHz frequency counter and programmable square-wave generator — so you'd be able to perform more tests conveniently with one tool. What's more: both models come bundled with a complete set of accessories to equip you right from the start at no extra cost.

Offering the same functionality as the U1252A/U1252B, the U1253A/U1253B is the world's first OLED handheld DMM. You won't have to squint to be sure you're reading it right: On the go or on the bench, you'll get crystal-clear viewing indoors, even in dark, off-angle situations.

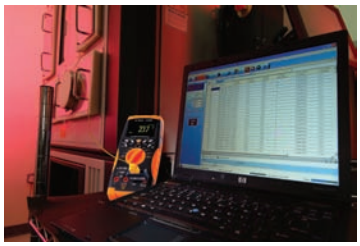


Figure 1: Automate recording of measurements with bundled GUI data-logging software.

Find problems quickly

Troubleshooting can be tricky, especially when you're dealing with elusive problems. With the U1250 Series'data logging capability, you can ensure that every reading gets recorded manually or at intervals you specify. Better yet: you can have virtually unlimited data logging saves when you connect any of the U1250 Series DMM to a PC with the optional IR-to-USB cable.

In addition, the U1250 Series lets you achieve greater confidence in your measurements with accurate true-RMS AC measurements, low DCV error rate of up to 0.025% and high-resolution display of 50,000 counts.

Uncompromising ruggedness and safety

The U1250 Series DMMs are housed in robust overmold enclosures, rated at CAT III 1000 V and CAT IV 600 V and operate over a wide temperature range of –20 °C to +55 °C. Each DMM also include a 30 kA high energy fuse to further protect you against violent fuse failures during high-current measure-ments. Built tough and certified to stringent industrial standards, the U1250 DMM is what you need to face the demands of everyday tasks.

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Take a closer look



Figure 2: U1253B front view

[1] U1253A/U1253B only
[2] U1252A/U1252B/U1253A/U1253B only

DC SPECIFICATIONS

FUNCTION	RANGE	RESOLUTION	TEST CURRENT/ BURDEN VOLTAGE	ACCURACY ± (% of reading + No. of Least Significant Digit)	
				U1251A/U1251B	U1252A/52B/53A/53B
VOLTAGE[1]	50.000 mV	0.001 mV	-	0.05 + 50[2]	0.05 + 50[2]
	500.00 mV	0.01 mV	-	0.03 + 5	0.025 + 5
	1000.0 mV	0.1 mV	-		
	5.0000 V	0.0001 V	-		
	50.000 V	0.001 V	-		
	500.00 V	0.01 V	-		0.03 + 5
	1000.0 V	0.1 V	-		
RESISTANCE[8]	500.00 Ω[3]	0.01 Ω	1.04 mA	0.08 +10	0.05 + 10
	5.0000 kΩ[3]	0.0001 kΩ	416 µA	0.08 + 5	0.05 + 5
	50.000 kΩ	0.001 kΩ	41.2 µA		
	500.00 kΩ	0.01 kΩ	4.12 µA		
	5.0000 MΩ	0.0001 MΩ	375 nA	0.2 + 5	0.15 +5
	50.000 MΩ[4]	0.001 MΩ	187 nA	1 + 10	1 + 5
	500.00 MΩ[4]	0.01 MΩ	187 nA	N/A	3+10 < 200 MΩ / 8+10 > 200 MΩ
	500.00 nS[5]	0.01 nS	187 nA	1 + 20	1 + 10
CURRENT	500.00 µA	0.01 µA	0.06 V (100 Ω)	0.1 + 5[6]	0.05 + 5[6]
	5000.0 µA	0.1 µA	0.6 V (100 Ω)		
	50.000 mA	0.001 mA	0.09 V (1 Ω)	0.2 + 5[6]	0.15 + 5[6]
	440.00 mA	0.01 mA	0.9 V (1 Ω)		
	5.0000 A	0.0001 A	0.2 V (0.01 Ω)	0.3 + 10	0.3 + 10
	10.000 A[7]	0.001 A	0.4 V (0.01 Ω)		0.3 + 5
DIODE TEST[8]	-	0.1 mV	1.04 mA	0.05 + 5	

[1] Input impedance: Refer to Table A on page 8.
[2] The accuracy could be 0.05% + 10 for U1251A and 0.05% + 5 for U1252A/3A. Always use the NULL function to zero out the thermal effect before measuring the signal.
[3] The accuracy of 500 Ω and 5 kΩ is specified after NULL function, which is used to subtract the test lead resistance and the thermal effect.
[4] For the range of 50 MΩ and 500 MΩ, the R.H. is specified for <60%.
[5] The accuracy is specified for <50 nS and after NULL function with open test lead.
[6] Always use the NULL function to zero out thermal effect with open test lead before measuring the signal. If the NULL function is not used, an additional 20 counts needs to be added to the DC current accuracy. Thermal effect could occur due to the following:
- Wrong operation to measure the high voltage of 50 V ~ 1000 V for resistance, diode, and mV measurements.
- After battery-charging has completed.
- After measuring a current greater than 440 mA, it is suggested that the meter be left to cool down for twice the measuring time used.

[7] Current can be measured up to 10 A continuously. An additional 0.5% needs to be added to the specified accuracy if the signal measured is in the range of 10 A~20 A for 30 seconds maximum. After measuring a current of > 10 A, leave the meter to cool down for twice the measuring time used before application of low current measurement.
[8] Maximum open voltage: <+ 4.2V.

U1251A/U1251B AC SPECIFICATIONS

FUNCTION	RANGE	RESOLUTION	ACCURACY ± (% of reading + No. of Least Significant Digit)			
			FREQUENCY			
			30 Hz ~ 45 Hz	45 Hz ~ 1 kHz	1 kHz ~ 10 kHz	10 kHz ~ 30 kHz
TRUE RMS AC VOLTAGE[1] [2]	50.000 mV	0.001 mV	1.0+60	0.6+40	1.0+40	1.6+60
	500.00 mV	0.01 mV		0.6+25		
	1000.0 mV	0.1 mV			1.0+25	1.6+40
	5.0000 V	0.0001 V				
	50.000 V	0.001 V				
	500.00 V	0.01 V				1.6+40[3]
	1000.0 V	0.1 V		0.6+40	1.0+40	N/A

FUNCTION	RANGE	RESOLUTION	ACCURACY ± (% of reading + No. of Least Significant Digit)		
			FREQUENCY		
			30 Hz ~ 45 Hz	45 Hz ~ 2 kHz	2 kHz ~ 20 kHz
AC CURRENT[2]	500.00 µA[4]	0.01 µA	1.5+50	0.8+20	3.0+80
	5000.0 µA	0.1 µA	1.5+40		3.0+60
	50.000 mA	0.001 mA			
	440.00 mA	0.01 mA			
	5.0000 A	0.0001 A	2.0+40[6]		3+60, <3 A/5 kHz
	10.000 A[5]	0.001 A			

U1252A/U1252B/U1253A/U1253B AC SPECIFICATIONS

FUNCTION	RANGE	RESOLUTION	ACCURACY ± (% of reading + No. of Least Significant Digit)				
			FREQUENCY				
			20 Hz ~ 45 Hz	45 Hz ~ 1 kHz	1 kHz ~ 10 kHz	10 kHz ~ 20 kHz	20 kHz~100 kHz[5]
TRUE RMS AC VOLTAGE[1] [8]	50.000 mV	0.001 mV	1.5+60	0.4+40	0.7+40	0.75+40	3.5+120
	500.00 mV	0.01 mV		0.4+25	0.4+25		
	1000.0 mV	0.1 mV					
	5.0000 V	0.0001 V			0.6+25	1.5+40	
	50.000 V	0.001 V			0.4+25		
	500.00 V	0.01 V					3.5+120[3]
	1000.0 V	0.1 V		0.4+40	0.4+40	1.5+40[3]	N/A

FUNCTION	RANGE	RESOLUTION	ACCURACY ± (% of reading + No. of Least Significant Digit)			
			FREQUENCY			
			20 Hz ~ 45 Hz	45 Hz ~ 1 kHz	1 kHz ~ 20 kHz	20 kHz~100 kHz[7]
AC CURRENT[8]	500.00 µA[4]	0.01 µA	1.0+20	0.7+20	0.75+20	5.0+80
	5000.0 µA	0.1 µA				
	50.000 mA	0.001 mA				
	440.00 mA	0.01 mA			1.5+20	
	5.0000 A	0.0001 A	1.5+20[6]		3+60, <3 A/5 kHz	N/A
	10.000 A[5]	0.001 A				

[1] Input impedance: Refer to Table A on page 8.
[2] AC mV/V and AC µA/mA/A specifications are true RMS AC coupled, valid from 5% to 100% of range. The crest factor may be up to 3 at full scale, up to 5 at half-scale, except for 1000 mV and 1000 V ranges, where the crest factor is 1.5 at full scale and 3 at half scale.
[3] The input signal is lower than 20,000,000 V-Hz (the product of voltage and frequency).
[4] Input current >35 µArms.
[5] Current can be measured from 2.5 A up to 10 A continuously. An additional 0.5% needs to be added to the specified accuracy if the signal measured is in the range of 10 A ~ 20 A for 30 seconds maximum. After measuring a current of >10 A, leave the meter to cool down for twice the measuring time used before application of low current measurement.
[6] Input current < 3 Arms.
[7] The additional error to be added as frequency >20 kHz and signal input <10% of range: 3 counts of LSD per kHz.
[8] Crest factor ≤ 3.0 at full scale, 5.0 at half scale except the 1000 mV and 1000 V ranges where it is 1.5 at full scale, 3.0 at half scale. For non-sinusoidal waveform, add 0.1% of reading ± 0.3% of range.

U1252A/U1252B/U1253A/U1253B AC+DC SPECIFICATIONS

FUNCTION	RANGE	RESOLUTION	ACCURACY ± (% of reading + No. of Least Significant Digit)				
			FREQUENCY				
			30 Hz ~ 45 Hz	45 Hz ~ 1 kHz	1 kHz ~ 10 kHz	10 kHz ~ 20 kHz	20 kHz~100 kHz[3]
TRUE RMS AC VOLTAGE[1] [2]	50.000 mV	0.001 mV	1.5+80	0.4+60	0.7+60	0.8+60	3.5+220
	500.00 mV	0.01 mV	1.5+65	0.4+30	0.4+30	0.8+45	3.5+125
	1000.0 mV	0.1 mV					
	5.0000 V	0.0001 V			0.6+30	1.5+45	
	50.000 V	0.001 V			0.4+30		
	500.00 V	0.01 V					3.5+125[4]
	1000.00 V	0.1 V		0.4+45	0.4+45	1.5+45[4]	N/A

FUNCTION	RANGE	RESOLUTION	ACCURACY ± (% of reading + No. of Least Significant Digit)		
			FREQUENCY		
			30 Hz ~ 45 Hz	45 Hz ~ 1 kHz	1 kHz ~ 20 kHz
AC CURRENT	500.00 µA[5]	0.01 µA	1.1+25	0.8+25	0.8+25
	5000.0 µA	0.1 µA			
	50.000 mA	0.001 mA	1.2+25	0.9+25	0.9+25
	440.00 mA	0.01 mA			
	5.0000 A	0.0001 A	1.8+30[7]	0.9+30	3.3+70, <3 A/5 kHz
	10.000 A[6]	0.001 A		0.9+25	

U1251A/U1251B/U1252A/U1252B TEMPERATURE SPECIFICATIONS

THERMOCOUPLE TYPE	RANGE		RESOLUTION	ACCURACY	
	°C	°F		°C	°F
K	–200 ~ 1372 °C	–328 ~ 2502 °F	0.1 °C/0.1 °F	0.3% + 3 °C	0.3% + 6 °F
J (for U1252A/U1252B)	–210 ~ 1200 °C	–346 ~ 2192 °F	0.1 °C/0.1 °F	0.3% + 3 °C	0.3% + 6 °F

U1253A/U1253B TEMPERATURE SPECIFICATIONS

THERMOCOUPLE TYPE	RANGE		RESOLUTION	ACCURACY	
	°C	°F		°C	°F
K	–200 ~ –40 °C	–104 ~ –40 °F	0.1 °C/0.1 °F	1% + 3 °C	1% + 5.4 °F
	–40 ~1372 °C	–40 ~ 2502 °F	0.1 °C /0.1 °F	1% + 1 °C	1% + 1.8 °F
J	–210 ~ –40 °C	–346 ~ –40 °F	0.1 °C /0.1 °F	1% + 3 °C	1% + 5.4 °F
	–40 ~ 1200 °C	–40 ~ 2192 °F	0.1 °C /0.1 °F	1% + 1 °C	1% + 1.8 °F

CAPACITANCE SPECIFICATIONS

RANGE	RESOLUTION	ACCURACY	MEASURING RATE AT FULL SCALE	MAX. DISPLAY
10.000 nF	0.001 nF	1% + 8	4 times/sec.	11000 counts
100.00 nF	0.01 nF	1% + 5		
1000.0 nF	0.1 nF			
10.000 µF	0.001 µF			
100.00 µF	0.01 µF			
1000.0 µF	0.1 µF		1 time/sec.	
10.000 mF	0.001 mF		0.1 times/sec.	
100.00 mF	0.01 mF	3% + 10	0.01 times/sec	

FREQUENCY SPECIFICATIONS[4]

RANGE	RESOLUTION	ACCURACY		MIN. INPUT FREQUENCY
		U1251A/2A	U1253A	
99.999 Hz	0.001 Hz	0.02%+3[8]	0.02%+3[8]	1 Hz
999.99 Hz	0.01 Hz	0.02%+3, <600 kHz	0.02%+3, <600 kHz	
9.9999 kHz	0.0001 kHz			
99.999 kHz	0.001 kHz			
999.99 kHz	0.01 kHz			

[1] Input impedance: Refer to Table A on page 8.
[2] Crest factor ≤ 3.0 at full scale, 5.0 at half scale except the 1000 mV and 1000 V ranges where it is 1.5 at full scale, 3.0 at half scale. For non-sinusoidal waveform, add 0.1% of reading ± 0.3% of range.
[3] The additional error to be added as frequency >20 kHz and signal input <10% of range: 3 counts of LSD per kHz.
[4] The input signal is lower than 20,000,000 V-Hz (the product of voltage and frequency).
[5] Input current >35 µArms.
[6] Current can be measured from 2.5 A up to 10 A continuously. An additional 0.5% needs to be added to the specified accuracy if the signal measured is in the range of 10 A ~ 20 A for 30 seconds maximum. After measuring a current of >10 A, leave the meter to cool down for twice the measuring time used before application of low current measurement.
[7] Input current < 3 Arms.
[8] For non-square wave signals, add 5 counts.

U1251A/U1251B FREQUENCY SENSITIVITY DURING VOLTAGE MEASUREMENT

FREQUENCY SENSITIVITY AND TRIGGER LEVEL				
INPUT RANGE	MINIMUM SENSITIVITY (R.M.S. Sine Wave)		TRIGGER LEVEL FOR DC COUPLING	
(Maximum input for specified accuracy = 10 x Range or 1000 V)	20 Hz - 100 kHz	>100 kHz ~ 200 kHz	< 100 kHz	>100 kHz ~ 200 kHz
50.000 mV	10 mV	15 mV	10 mV	15 mV
500.00 mV	25 mV	35 mV	60 mV	70 mV
1000.0 mV	40 mV	50 mV	100 mV	150 mV
5.0000 V	0.25 V	0.5 V	0.5 V / 1.25 V (< 100 Hz)	0.6 V
50.000 V	2.5 V	5 V	5 V	6 V
500.00 V	25 V	N/A	50 V	N/A
1000.0 V	50 V	N/A	300 V	N/A

U1252A/U1252B/U1253A/U1253B FREQUENCY SENSITIVITY DURING VOLTAGE MEASUREMENT

FREQUENCY SENSITIVITY AND TRIGGER LEVEL				
INPUT RANGE	MINIMUM SENSITIVITY (R.M.S. Sine Wave)		TRIGGER LEVEL FOR DC COUPLING	
(Maximum input for specified accuracy = 10 x Range or 1000 V)	20 Hz ~ 200 kHz	>200 kHz ~ 500 kHz	< 100 kHz	>100 kHz ~ 500 kHz
50.000 mV	10 mV	25 mV	10 mV	25 mV
500.00 mV	70 mV	150 mV	70 mV	150 mV
1000.0 mV	120 mV	300 mV	120 mV	300 mV
5.0000 V	0.3 V	1.2 V	0.6 V	1.5 V
50.000 V	3 V	5 V	6 V	15 V
500.00 V	30 V < 100 kHz	N/A	60 V	N/A
1000.0 V	50 V < 100 kHz	N/A	120 V	N/A

FREQUENCY SENSITIVITY DURING CURRENT MEASUREMENT

INPUT RANGE	MINIMUM SENSITIVITY (R.M.S. Sine Wave) 20 Hz ~ 20 kHz
500.00 µA	100 µA
5000.0 µA	250 µA
50.000 mA	10 mA
440.00 mA	25 mA
5.0000 A	1 A
10.000 A	2.5 A

PEAK HOLD

SIGNAL WIDTH	ACCURACY FOR DC mV/VOLTAGE/CURRENT
Single event > 1 ms	2% + 400 for all ranges
Repetitive > 250 µs	2% + 1000 for all ranges

DUTY CYCLE AND PULSE WIDTH [1]

FUNCTION	MODE	RANGE	ACCURACY AT FULL SCALE
DUTY CYCLE	DC Coupling	0.01% ~ 99.99%	0.3% per kHz + 0.3%
PULSE WIDTH	500 ms	0.01 ms	0.2% + 3
	2000 ms	0.1 ms	0.2% + 3

[1] The positive or negative pulse width must be greater than 10 µs, and the duty cycle range should be considered. The pulse width range is determined by the frequency of the signal.

U1252A/U1252B/U1253A/U1253B FREQUENCY COUNTER SPECIFICATIONS

DIVISION	RANGE	RESOLUTION	ACCURACY ± (% of reading + No. of Least Significant Digit)		SENSITIVITY	MIN. INPUT FREQUENCY	MAXIMUM MEASUREMENT LEVEL
			U1252A	U1253A			
1 (secondary display "-1-")	99.999 Hz	0.001 Hz	0.02% + 3[1]	0.02% + 3[1]	100 mV R.M.S.	0.5 Hz	< 30 Vpp
	999.99 Hz	0.01 Hz	0.002% + 5, <985 kHz	0.002% + 5, < 985 kHz			
	9.9999 kHz	0.0001 kHz					
	99.999 kHz	0.001 kHz					
	999.99 kHz	0.01 kHz			200 mV R.M.S.		
	9.9999 MHz	0.0001 MHz	0.002% + 5, < 1 MHz				
100 (secondary display "-100-")	9.9999 MHz	0.0001 MHz	0.002% + 5, < 20 MHz	0.002% + 5, < 20 MHz	400 mV R.M.S.	1 MHz	
	99.999 MHz	0.001 MHz			600 mV R.M.S.		

U1252A/U1252B/U1253A/U1253B SQUARE WAVE OUTPUT

OUTPUT[2]	RANGE	RESOLUTION	ACCURACY
FREQUENCY	0.5, 1, 2, 5, 6[6], 10, 15, 20, 25, 30, 40, 50, 60, 75, 80, 100, 120, 150, 200, 240, 300, 400, 480, 600, 800, 1200, 1600, 2400, 48000 Hz	0.01 Hz	0.005% + 2
DUTY CYCLE[3]	0.39% ~ 99.60%	0.390625%	0.4% of full scale[4]
PULSE WIDTH[4]	1/Frequency	Range/256	0.2 ms + Range/256
AMPLITUDE	Fixed 0 ~ +2.8 V	0.1 V	0.2 V

MEASURING RATE

FUNCTION	TIMES/SECOND
ACV	7
ACV + dB	7
DCV	7
AC + DC V	2
Ω /nS	14
Diode	14
Capacitance	4 (< 100 µF)
DCI	7
ACI	7
AC + DC I	2
Temperature	6
Frequency	1 (>10 Hz)
Duty cycle/Pulse width	0.5 (>10 Hz)

MANUAL AND INTERVAL DATA LOGGING

LOGGING TYPE	MAXIMUM DATA POINTS[5]		
	U1251A	U1252A	U1253A
MANUAL	100	100	100
INTERVAL	200	200	1000

DECIBEL (dB) CALCULATION

dB BASE	REFERENCE	DEFAULT REFERENCE
1 mΩ (dBm)	1-9999 Ω	50 Ω
1 V (dBV)	1 V	1 V

[1] All frequency counters are susceptible to errors. Shielding inputs from external noise pickup is critical to minimize measurement errors. For non-square wave signals, add 5 counts.
[2] Output impedance: 3.5 kΩ maximum.
[3] The positive or negative pulse width must be greater than 50 µs for adjustment of the duty cycle or pulse width under different frequencies. Otherwise, the accuracy and range will be different from the specifications defined.
[4] For signal frequencies greater than 1 kHz, an addition of 0.1% per kHz is added to the accuracy.
[5] For data logging to PC, maximum number of data points is dependent on available hard disk space.
[6] For the U1253A/U1253B model.

INPUT IMPEDANCE

Table A

FUNCTION	RANGE	INPUT IMPEDANCE
DC Voltage[1]	50.000 mV	10.00 MΩ
	500.00 mV	10.00 MΩ
	1000.0 mV	10.00 MΩ
	5.0000 V	11.10 MΩ
	50.000 V	10.10 MΩ
	500.00 V	10.01 MΩ
	1000.0 V	10.001 MΩ
AC Voltage[2]	50.000 mV	10.00 MΩ
	500.00 mV	10.00 MΩ
	1000.0 mV	10.00 MΩ
	5.0000 V	10.00 MΩ
	50.000 V	10.00 MΩ
	500.00 V	10.00 MΩ
	1000.0 V	10.00 MΩ
AC + DC Voltage[2]	50.000 mV	10.00 MΩ
	500.00 mV	10.00 MΩ
	1000.0 mV	10.00 MΩ
	5.0000 V	11.10 MΩ || 10 MΩ
	50.000 V	10.10 MΩ || 10 MΩ
	500.00 V	10.01 MΩ || 10 MΩ
	1000.0 V	10.001 MΩ || 10 MΩ

[1] For 5 V to 1000 V range, the specified input impedance in parallel with 10 MΩ at dual display.
[2] The specified input impedance (nominal) in parallel with <100 pF.

GENERAL SPECIFICATIONS

DISPLAY

Both primary and secondary displays are 5-digit on the LCD display. Both the primary and secondary displays offer a maximum resolution of 50,000 counts. Automatic polarity indication.

POWER CONSUMPTION

105 mVA / 420 mVA (with backlight) maximum (U1251A/U1251B)
165 mVA / 480 mVA (with backlight) maximum (U1252A/U1252B)
420 mVA maximum (U1253A/U1253B)

BATTERY TYPE

9 V Alkaline battery (ANSI/NEDA 1604A or IEC 6LR61)
9 V Carbon-zinc battery (ANSI/NEDA 1604D or IEC6F22)
7.2 V or 8.4 V Ni-MH Rechargeable battery

BATTERY LIFE

U1251A/U1251B: 72 hours typical
U1252A/U1252B: 36 hours typical
U1253A/U1253B: 8 hours typical

OPERATING ENVIRONMENT

- Full accuracy at –20 °C to 55 °C ; and to 80% RH for temperatures up to 35 °C, decreasing linearly to 50% RH at 55 °C
- 0 to 2000 m altitude per IEC 61010-1 2nd Edition CAT III, 1000 V / CAT IV, 600 V

STORAGE COMPLIANCE

–40 °C to 70 °C with battery removed

SAFETY COMPLIANCE

- IEC 61010-1:2001 / EN610101-1:2001
- Canada: CSA C22.2 No. 61010-1:2004

MEASUREMENT CATEGORY

CAT III 1000 V / CAT IV 600 V

EMC COMPLIANCE

Certified to IEC/EN 61326: 2002, CISPR 11, and equivalents for Group 1, Class A

COMMON MODE REJECTION RATIO (CMRR)

U1251A/U1251B/U1252A/U1252B: >90 dB at DC, 50/60 Hz ± 0.1% (1 kΩ unbalanced)
U1253A/U1253B: >100 dB at DC, 50/60 Hz ± 0.1% (1 kΩ unbalanced)

NORMAL MODE REJECTION RATIO (NMRR)

U1251A/U1251B/U1252A/U1252B: >60 dB at DC, 50/60 Hz ± 0.1%
U1253A/U1253B: >90 dB at DC, 50/60 Hz ± 0.1%

TEMPERATURE COEFFICIENT

0.15 * (specified accuracy)/°C (from 20 °C to 18 °C or 28 °C to 55 °C)

SHOCK and VIBRATION

Tested to IEC/EN 60068-2

DIMENSIONS (HxWxD)

203.5 mm x 94.4 mm x 59.0 mm

WEIGHT

U1251A/U1251B: 504±5 g with battery
U1252A/U1252B/U1253A/U1253B: 527±5 g with battery

CHARGING TIME (only U1252A/3A)

< 220 minutes approx. at the environment of 10 °C to 30 °C

WARRANTY

3 years for main unit

3 months for standard accessories unless otherwise specified.

ORDERING INFORMATION



U1251A U1251B U1252A U1252B U1253A U1253B

STANDARD SHIPPED ACCESSORIES

DESCRIPTION	APPLICABLE MODELS					
	U1251A	U1252A	U1253A	U1251B	U1252B	U1253B
Alligator clips	•	•	•	•	•	•
SMT grabbers	•	•	–	–	–	–
Fine-tip test probes	•	•	–	–	–	–
Test probe leads (4-mm)	•	•	•	•	•	•
Test probe leads (19-mm)	•	•	•	•	•	•
Mini grabber	•	•	–	–	–	–
Alkaline 9 V battery	•	–	–	•	–	–
Rechargeable Ni-MH battery with power adapter	–	•	•	–	•	•
Soft carrying case	•	•	–	–	–	–
Certificate of Calibration	•	•	•	•	•	•
Test Report	•	•	•	•	•	•
Quick Start Guide	•	•	•	•	•	•

U1253A OPTION

Option 001 Bundled SMT grabbers, fine-tip test probes and soft carrying case

OPTIONAL ACCESSORIES

MEASURING ACCESSORIES (NON-TEMPERATURE)



U1160A Standard test lead kit

Includes two test leads (red and black), alligator clips, fine-tip test probes, SMT grabbers and mini grabber (black).

- Test leads: CAT III 1000 V, 15 A
- Alligator clips: CAT III 1000 V, 10 A
- Fine-tip test probes: CAT II 300 V, 3 A
- SMT grabbers: CAT II 300 V, 3 A
- Mini grabber: CAT II 300 V, 3 A



U1161A Extended test lead kit

Includes two test leads (red and black), two test probes, medium-sized alligator clips and 4-mm banana plugs.

- Test leads: CAT III 1000 V, CAT IV 600 V, 15 A
- Test probes: CAT III 1000 V, 15 A
- Medium-sized alligator clips: CAT III 600 V, 10 A
- 4-mm banana plugs: CAT II 600 V, 10 A



U1162A Alligator clips

- One pair of insulated alligator clips (red and black). Recommended for use with Agilent standard test leads.
- Rated CAT III 1000 V, 10 A.



U1163A SMT grabbers

- One pair of SMT grabbers (red and black). Recommended for use with Agilent standard test leads.
- Rated CAT II 300 V, 3 A.



U1164A Fine-tip test probes

- One pair of fine-tip test probes (red and black). Recommended for use with Agilent standard test leads.
- Rated CAT II 300 V, 3 A.



U1165A Test probe leads

- Rated CAT III 1000 V, 15 A

MEASURING ACCESSORIES (NON-TEMPERATURE)



U1168A Standard test lead kit

Includes two test leads (red and black), 19-mm and 4-mm test probes, alligator clips, fine-tip test probes, SMT grabbers and mini grabber (black).

- Test leads: CAT III 1000 V, CAT IV 600 V, 15 A
- Test probes (19-mm tip): CAT III 1000 V, CAT IV 600 V, 15 A
- Test probes (4-mm tip): CAT III 1000 V, CAT IV 600 V, 15 A (highly recommended for CAT IV environment)
- Alligator clips: CAT III 1000 V, 10 A
- Fine-tip test probes: CAT II 300 V, 3 A
- SMT grabber: CAT II 300 V, 3 A
- Mini grabber: CAT II 300 V, 3 A



U1169A Test probe leads

Includes two test leads (red and black), and a pair each of 19-mm and 4-mm test probes.

- Test leads: CAT III 1000 V, CAT IV 600 V, 15 A
- Test probes (19-mm tip): CAT III 1000 V, CAT IV 600 V, 15 A
- Test probes (4-mm tip): CAT III 1000 V, CAT IV 600 V, 15 A (highly recommended for CAT IV environment)



U1583B AC current clamp

- Dual range: 40 A and 400 A
- Rated CAT III 600 V
- BNC-to-banana-plug adapter provided for use with DMMs

MEASURING ACCESSORIES (TEMPERATURE)



U1180A Thermocouple adapter+lead kit, J and K types

Includes thermocouple adapter, thermocouple bead J-type and thermocouple bead K-type.

- T/C adapter J/K-type
- T/C bead J-type: –20 °C to 200 °C
- T/C bead K-type: –20 °C to 200 °C



U1181A Immersion temperature probe

- Type-K T/C for use in oil and other liquids
- Measurement range: –50 °C to 700 °C
- Includes adapter U1184A for connection to DMM



U1182A Industrial surface temperature probe

- Type-K T/C for use on still surfaces
- Measurement range: –50 °C to 400 °C
- Includes adapter U1184A for connection to DMM



U1183A Air temperature probe

- Type-K T/C for use in air and non-caustic gas
- Measurement range: –50 °C to 800 °C
- Includes adapter U1184A for connection to DMM



U1184A Temperature probe adapter

- Mini-connector-to-banana-plug adapter for use with DMM



U1185A J-type thermocouple and adapter

- T/C adapter J/K-type
- T/C bead J-type: –20 °C to 200 °C

MEASURING ACCESSORIES (TEMPERATURE)



U1186A K-type thermocouple and adapter

- T/C adapter J/K-type
- T/C bead J-type: –20 °C to 200 °C

CABLE



U1173A IR-to-USB cable

- For remote control and data logging to PC
- Max. baud rate: 19,200 bits per second

CARRYING CASE



U1172A Transit case (aluminium-clad)

The robust casing to transport your DMM and accessories

- Aluminum-clad, black panel construction
- Dimension: 18″ (H) x 13″ (W) x 6″ (D)
- Weight: 4 kg



U1174A Soft carrying case

The convenient way to carry your DMM and essential accessories

- Dimension: 9″ (H) x 5″ (W) x 3″ (D)

HANGING KIT



U1171A Magnetic hanging kit

For fastening of DMM to a steel surface so both hands are free.

AC ADAPTOR



U1170A AC adaptor

Includes AC power cord based on country