Keysight Technologies
U1240 Series Handheld Digital Multimeters

Data Sheet



Perform Test Confidently and Efficiently
Over a Longer Period of Time!

KEYSIGHT TECHNOLOGIES

Unlocking Measurement Insights

Introduction

For technicians or industrial test engineers, their ultimate goal is to keep the production line running seamlessly to prevent unplanned shutdown. The strong and solid U1240C Series handheld digital multimeters (DMMs) are the tools you need to work efficiently. Certified to IP 67 and capable to withstand up to 3-meter (10 feet) drop to suit harsh working environments, these durable DMMs can even work longer for you with up to 400 hours of battery life. Better yet, you can optimize productivity with the unique remote data logging functionality designed to work together smoothly. Perform test confidently and efficiently – everything you need to get the job done.



Key Features

- 10,000-count display
- Up to 0.09% basic DCV accuracy
- Longer battery life up to 400 hours
- Certified to IP 67 for water and dust protection
- Tested to withstand a 3-meter (10-ft) drop
- CAT III 1000 V / CAT IV 600 V overvoltage protection
- Special features:
  - Harmonic ratio[1] measurement to quickly identify the presence of harmonics in AC signals
  - Z_{LOW}, low impedance mode[1] to eliminate false readings caused by stray voltages
  - Vsense[1] for non-contact voltage detection
  - T1 – T2 differential temperature[1] measurement
  - Built-in flashlight
- For Keysight Remote Link solution, add on optional U1117A Infrared (IR)-to-*Bluetooth*® adapter to get instant wireless *Bluetooth* connection

1. U1242C only

Test Confidently and Efficiently

Harmonics ratio

Regular maintenance to keep the production line running seamlessly is the ultimate goal for industrial test engineers. In real life there is the presence of harmonics due to many electronic devices powered by switched mode current pulses that travels back into the power source. If these unwanted harmonics become too large, they have unwanted side effects: overheating that shortens the lifespan of motors, generators and transformers; premature tripping of circuit breakers; and blown fuses. Hence an accurate, dependable U1240C Series DMM helps to ensure early detection of harmonics in the AC supply. One of the fastest ways to detect and gauge the percentage of distortion due to harmonics is by measuring the harmonic ratio of the incoming AC voltage.

The U1240C Series offers a fast one-button check with its harmonic ratio function. The ratio percentage helps you to decide if further analysis of the power source is required with an oscilloscope or a spectrum analyzer.

Low impedance mode

Stray voltages are usually encountered in non-energized electrical wiring adjacent to powered wires due to capacitive or inductive coupling between these wires. The low impedance mode helps to reduce false readings by dissipating these stray voltages thus improves safety and measurement efficiency during voltage measurement.

Vsense for non-contact voltage detection

The U1240C Series handheld DMM have Vsense – a unique method of non-contact voltage detection that safeguards users from exposure to hot or live wires while making measurements in dangerous working environments. Upon detection of voltage, it produces a unique combination of beeping alert and blinking LED light to alert users. This feature is especially useful to make measurements more efficiently in dark or noisy environment.

Dual and differential temperature

Whether during installation, maintenance or troubleshooting heating, ventilation and air-conditioning (HVAC), temperature measurements are essential. As an example, to ensure boiler temperature adheres to safety requirements, you would need to measure both boiler and air temperature simultaneously to achieve accurate real-time readings. With a faulty air conditioning system, viewing the temperature difference between warm return air and cool air supply helps to reveal the cooling behavior of the evaporator with respect to time. Now with the convenience of U1240C Series DMM, you need only one instrument to efficiently get dual and differential measurements.

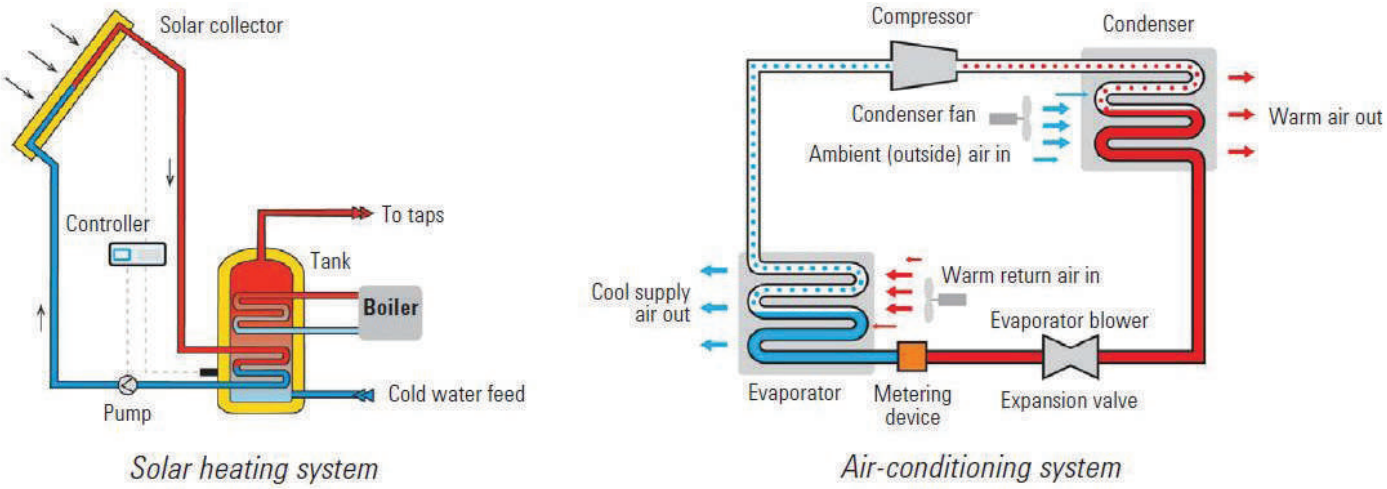

Figure 1. Dual and differential temperature for efficient testing of HVAC systems

Built-in flashlight with ergonomics in mind

Designed for handheld users working in poorly lit environments, the U1240C Series fits comfortably in your palm allowing you to single-handedly illuminate test area with its easily activated built-in LED flashlight. With ergonomics in mind, you can swiftly make more measurements without straining your hands even over a longer period of time.



Figure 2. Ergonomically shaped with a built-in flashlight

Prolonged battery life and rugged

The last thing you want is for your tools to run out of juice when you need it the most. The U1240 series handheld DMMs lets you carry out test and measurements over a longer duration than ever before. With up to 400 hours of battery life, you have a hand-held DMM which works for a long time reducing the hassle of battery change, especially useful for frequent usage or prolonged testing. Put your battery concerns behind and fully focus on your work at hand, as it should be for maximum productivity.

When operating in harsh environments, you'd need tools which are strong and solid enough to stand up to the task. The U1240C series are housed in robust over mold enclosures and certified to IP 67 for dust and water proof. Better yet, it is also designed to absorb the impact of a 3-meter (10 ft) drop – especially useful in case of accidental drops during installation and maintenance work.

Perform data logging wirelessly and simultaneously

Keep the production lines running smoothly with the unique data logging capability. The U1240C is capable of performing data logging where users have two options to record individual readings. First option is to simply record data into the main DMM unit by utilizing the built-in internal memory of up to 10,000 readings storage. Second option is to transmit data to a PC with the IR-USB cable utilizing the Keysight Technologies, Inc. handheld Meter Logger software or to do so wirelessly with the optional Keysight Remote link solution. With this capability, you can ensure every reading gets recorded accurately at intervals you specify. Better yet, you can eliminate the conventional data entering process and generate error- free automated test reports in various forms such as graph, table, and statistical information or limit test results.



Figure 3. Easily capture test readings with the Keysight handheld Meter Logger software



Figure 4. U1240C series is compatible with Keysight Remote Link solution to safely measure, view and log test measurements

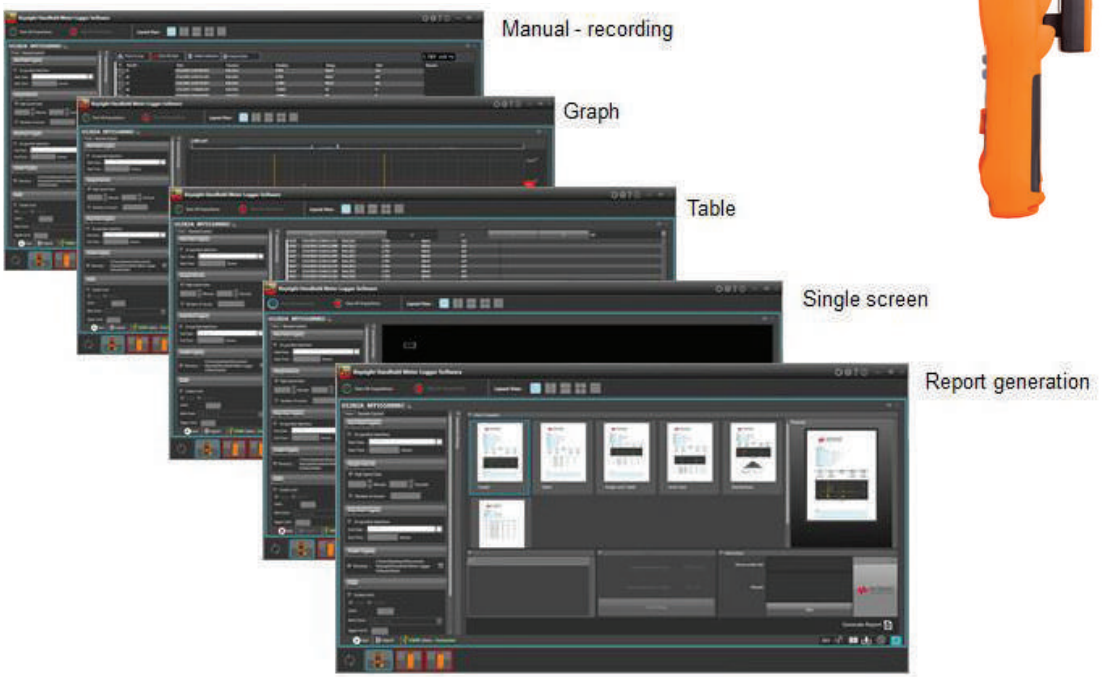

Figure5. Get automatic report generated in various formats via PDF

Take a Closer Look

Front panel



10,000-count dual display

Data logging:
- Manual data logging up to 100 readings, or,
- Auto/event data logging up to 2,000 readings

Harmonics ratio* to detect the presence of harmonics content

Z_{LOW} (low input impedance)* to remove ghost or induced voltage from your measurement

Vsense* red LED indicator for non-contact voltage detection



Press-and-hold to switch on the built-in flashlight

T1 -T2 differential temperature* measurement

Broad range of measurement functions: voltage, current, frequency, capacitance, resistance, continuity, diode test and temperature

CAT IV 600 V CAT III 1000 V overvoltage protection

Back panel



Built-in flashlight

Probe holder/storage



Ergonomically designed for better grip







IR-USB connectivity with optional IR-USB cable



Easy access to battery and fuse compartment

* U1242C only

U1240C series comparison

		U1241C	U1242C
Basic features			
Display resolution		10,000	10,000
Auto/manual ranging		Yes	Yes
Analog bar graph		Yes	Yes
Backlight		Yes	Yes
AC bandwidth		2 kHz	2 kHz
True RMS		AC	AC (Switchable to averaging sense)
Measurements			
Voltage DC	Range	100 mV to 1000 V	100 mV to 1000 V
	Accuracy	0.09 % + 2 cnts	0.09 % + 2 cnts
Voltage AC	Range	100 mV to 1000 V	100 mV to 1000 V
	Accuracy	1.0 % + 3 cnts	1.0 % + 3 cnts
Current DC	Range	1000 µA to 10 A	1000 µA to 10 A
	Accuracy	0.1 % + 2 cnts	0.1 % + 2 cnts
Current AC	Range	1000 µA to 10 A	1000 µA to 10 A
	Accuracy	1 % + 3 cnts	1 % + 3 cnts
Resistance	Range	1000 Ω to 100 MΩ	100 Ω to 100 MΩ
	Accuracy	0.2 % + 2 cnts	0.2 % + 2 cnts
Frequency	Range	100 Hz to 10 MHz	100 Hz to 10 MHz
	Accuracy	0.02 % + 1 cnts	0.02 % + 1 cnts
Capacitance	Range	1000 nF to 10 mF	1000 nF to 10 mF
	Accuracy	1 % + 5 cnts	1 % + 5 cnts
Temperature (K-type thermocouple)	Range	–200 °C to 1372 °C	–200 °C to 1372 °C
	Accuracy	1 % + 1 °C	1 % + 1 °C
Continuity with beeper		Yes	Yes
Diode test		Yes	Yes
Data management			
Min/Max recording		Yes	Yes
Display hold		Yes	Yes
Auto hold		Yes	Yes
Null		Yes	Yes
PC-Connectivity		Infrared (IR)-USB; IR-*Bluetooth* (optional with U1117A)	Infrared (IR)-USB; IR-*Bluetooth* (optional with U1117A)
Special features			
Harmonic ratio			Yes
Vsense: non-contact voltage detect			Yes
Z_{LOW} - low impedance mode			Yes
T1 - T2 differential temperature measurement			Yes
Safety and regulatory			
Over-voltage safety protection		CAT III 1000 V / CAT IV 600 V	CAT III 1000 V / CAT IV 600 V
EN/IEC 61010-2-030: 2010 compliance		Yes	Yes
EN/IEC 61010-1: 2010 compliance		Yes	Yes
General			
Operating temperature		–20 °C to 55 °C 0 % to 80 % R.H.	–20 °C to 55 °C 0 % to 80 % R.H.
Battery (included)		4 x 1.5 V AAA	4 x 1.5 V AAA
Battery life		400 hours	400 hours
Warranty		3-year	3-year
Calibration		One year, or; Two years (with 1.5 times of one year specification)	One year, or; Two years (with 1.5 times of one year specification)
Dimensions (H x W x D)		198 x 96 x 57 mm	198 x 96 x 57 mm

General specifications

Display	4 ½-digit liquid crystal display (LCD) with maximum reading of 11,000-count
	Automatic polarity indication
Power consumption	530 mVA maximum with backlight and flashlight.
Battery type	4x 1.5 V AA alkaline batteries (ANSI/NEDA 24A or IEC LR03), or; 4x 1.5 V AA zinc chloride batteries (ANSI/NEDA 24D or IEC R03), or; 4x 1.5 V AA lithium batteries (ANSI/NEDA 24-LF or IEC FR03)
Battery life	400 hours typical based on new alkaline batteries for DC voltage measurement
Connectivity	Infrared (IR) port, connect with: – IR-USB cable, or; – U1117A IR-to-*Bluetooth* adapter (*Bluetooth* Class 1), or; – U1177A IR-to-*Bluetooth* adapter (*Bluetooth* Class 2)
Fuse	10 x 35 mm, 440 mA / 1000 V, 10 kA minimum fast-acting fuse 10 x 38 mm, 11 A / 1000 V, 20 kA minimum fast-acting fuse
Operating environment	Full accuracy from –20 °C to 55 °C; and up to 80 % R.H. for temperature up to 30 °C decreasing linearly to 50 % R.H. at 55 °C Pollution degree II Altitude up to 3000 meters
Storage compliance	-40 0C to 70 °C, 0 to 80 % R. H. (with battery removed)
Safety compliance	EN/IEC 61010-2-030: 2010 EN/IEC 61010-1: 2010
Measurement category	CAT III 1000 V / CAT IV 600 V
Electromagnetic compatibility (EMC)	Susceptibility and emissions: commercial limits per EN/IEC 61326-1
Ingression protection rating	IP-67, protected against dust and the effect of immersion between 15 cm and 1 m
Temperature coefficient	0.05 x (specified accuracy) / °C (from –20 °C to 18 °C or 28 °C to 55 °C)
Common mode rejection ration (CMRR)	> 120 dB at DC, 50/60 Hz ± 0.1 % (1 kΩ unbalanced)
Normal mode rejection ratio (NMRR)	> 60 dB at 50/60 Hz ± 0.1%
Dimensions (H x W x D)	198 x 96 x 57 mm
Weight	545 grams (with batteries)
Warranty	Three years for main unit Three months for standard shipped accessories
Calibration cycle	One year, or; Two years (with 1.5 times of one year specification)

Specification assumptions

- Accuracy is given as ± (% of reading + counts of least significant digit) at 23 °C ± 5 °C, with relative humidity less than 80 % R.H.
- Accuracy is specified for 1-year after calibration, at operating temperature of room temperature. Multiply 1.5 times of the accuracy for 2-year after calibration, example ± (1.5 x % of reading + 1.5 x counts of least significant digit).
- AC V/mV and AC µA/mA/A specifications are AC coupled.
- True RMS measurement is valid from 5 % of range to 100 % of range.
- For non-sinusoidal waveforms, add (0.5 % of reading + 0.3 % of full scale) typically
- The crest factor may be up to 3.0 at full scale except for the 1000 V and 600 mV ranges where these ranges are 1.5 at full scale.
- Specification is based on 5 times/second of data refresh rate
- CMRR and NMRR are based on 5 times/second of data refresh rate
- After Z_{LOW} voltage measurement, wait for at least 20 minutes to cool down thermal impact before making next measurement.

DC specifications for U1241C / U1242C

Function	Range	Resolution	Accuracy ± (% of reading + counts of least significant digit)	Test current / burden voltage
Voltage	100 mV[1,3]	0.01 mV	0.09 % + 2	–
	600 mV[1,3]	0.1 mV	0.09 % + 2	–
	1000 mV[4]	0.1 mV	0.09 % + 2	–
	10 V[4]	0.001 V	0.09 % + 2	–
	100 V[4]	0.01 V	0.09 % + 2	–
	1000 V[4]	0.1 V	0.09 % + 2	–
	Z_{LOW}[2,4] (applicable to 1000 V range)	0.1 V	1 % + 4	–
Current[5]	1000 µA[3]	0.01 µA	0.1 % + 2	0.032 V (30 Ω)
	10 mA[3]	0.001 mA	0.1 % + 2	0.32 V (30 Ω)
	100 mA[1,3]	0.01 mA	0.2 % + 2	0.2 V (0.5 Ω)
	600 mA[1,3]	0.1 mA	0.2 % + 2	0.88 V (0.5 Ω)
	10 A[2,4]	0.001 A	0.3 % + 5	0.5 V (0.01 Ω)
Diode test	–	0.001 V	0.5 % + 10	< 1.6 mA
Function	**Range**	**Resolution**	**Accuracy ± (% of reading + counts of least significant digit)**	**Continuity threshold**
Resistance / audible continuity	100 Ω[3,4,7]	0.01 Ω	0.2 % + 5	28 ± 10 Ω
	1000 Ω[4]	0.1 Ω	0.2 % + 2	28 ± 10 Ω
	10 kΩ	0.001 kΩ	0.2 % + 2	0.151 ± 0.05 kΩ
	100 kΩ	0.01 kΩ	0.2 % + 2	1.38 ± 0.5 kΩ
	1000 kΩ	0.1 kΩ	0.2 % + 2	13.8 ± 4.3 kΩ
	10 MΩ[5]	0.001 MΩ	0.8 % + 2	0.12 ± 0.04 MΩ
	100 MΩ[5,6]	0.01 MΩ	1.5 % + 3 (<50 MΩ) 3.0 % + 3 (>50 MΩ)	0.12 ± 0.04 MΩ

Notes for DC specifications

A. Notes for voltage specification.

1. 100 mV and 600 mV ranges available on Temperature T1 terminal. The accuracy is specified for 10 MΩ (nominal) input impedance. The accuracy is specified after NULL function is used to zero out thermal effect (by shorting test leads).
2. Only available in U1242C only. 1.8 kΩ typical input impedance for Z_{LOW} mode.
3. Overload protection for 100 mV and 600 mV ranges: 1000 Vrms for circuits < 0.3 A short circuit current.
4. Overload protection: 1000 Vrms.

B. Notes for current specification

1. Current can be measured up to 440 mA continuously. Maximum of 20 hours for measuring current more than 440 mA and up to 600 mA. 100 mA and 600 mA ranges have thermal effect of 0.35 µA/mA to be offset after current applied to these ranges. Cool down the meter for at least 6 seconds if 100 mA was applied, and at least 3 minutes if 600 mA was applied; or alternatively use the NULL function to zero-out thermal effect with open test lead before measuring the signal.
2. Current can be measured up to 10 A continuously. Maximum of 30 seconds for measuring current more than 10 A to 20 A, add 0.3 % to specified accuracy. The multimeter needs to be cool down after measuring current that is more than 10 A. Cool down the meter for twice the duration of the measured time and use NULL function to zero-out thermal effect before proceeding with lower current measurement.
3. 1000 µA to 600 mA ranges (connection with mA terminal) overload protection by 10 x 35 mm, 440 mA/1000 V, and 10 kA minimum fast-acting fuse.
4. 10 A ranges (connection with A terminal) overload protection by 10 x 38 mm, 11 A / 1000 V, 20 kA minimum fast-acting fuse.
5. Ensure good ventilation and no heat element close to the meter.

C. Notes for diode test specification

1. Overload protection: 1000 Vrms for circuits < 0.3 A short circuit current.
2. Built-in buzzer sounds when reading is below 0.05 V approximately, and single tone for normal forward-biased diode or semiconductor junction as 0.3 V ≤ reading ≤ 0.8 V.
3. The maximum threshold voltage display is less than +2 V.

D. Notes for resistance/audible Continuity specification

1. Maximum open voltage: < +2.4 V
2. Built-in buzzer sounds as transient when resistance less than 28 ± 10 Ω. It may capture the intermittent for longer than 1 ms.
3. 100 Ω range is for U1242C only
4. The accuracy is specified after Math Null, which is used to subtract the test lead resistance and the thermal effect. Ensure good ventilation and no heat element close to the meter.
5. For 10 MΩ and 100 MΩ ranges, the R.H. is specified for <60 % at 30 °C.
6. For 100 MΩ range: temperature coefficient is 0.1 x (specified accuracy) / °C.
7. Resistance range 100 Ω is typical characteristic.

AC voltage specifications for U1241C / U1242C

Function	Range	Resolution	Accuracy ± (% of reading + counts of least significant digit)	
			40 Hz to 1 kHz	1 kHz to 2 kHz
AC voltage[1,4] True RMS	100 mV[2]	0.01 mV	1.0 % + 3	1.5 % + 3
	600 mV[2]	0.1 mV	1.0 % + 3	1.5 % + 3
	1000 mV	0.1 mV	1.0 % + 3	1.5 % + 3
	10 V	0.001 V	1.0 % + 3	1.5 % + 3
	100 V	0.01 V	1.0 % + 3	1.5 % + 3
	1000 V	0.1 V	1.0 % + 3	1.5 % + 3
	Z_{LOW}[3] (applicable to 1000 V range)	0.1 V	2.0 % + 4	N/A
AC voltage[1,4] Averaging sense	100 mV[2]	0.01 mV	1.0 % + 5	1.5 % + 5
	600 mV[2]	0.1 mV	1.0 % + 5	1.5 % + 5
	1000 mV	0.1 mV	1.0 % + 5	1.5 % + 5
	10 V	0.001 V	1.0 % + 5	1.5 % + 5
	100 V	0.01 V	1.0 % + 5	1.5 % + 5
	1000 V	0.1 V	1.0 % + 5	1.5 % + 5

Notes
1. Overload protection: 1000 Vrms.
2. 100 mV and 600 mV ranges available on Temperature T1 terminal. The accuracy is specified for 10 MΩ (nominal) input impedance. The accuracy is specified after NULL function is used to zero out thermal effect (by shorting test leads).
3. Only available in U1242C only. 1.8 kΩ typical input impedance for Z_{LOW} mode.
4. The input signal is lower than the product of 20,000,000 V x Hz.

AC current specifications for U1241C / U1242C

Function	Range	Resolution	Accuracy ± (% of reading + counts of least significant digit)	
			40 Hz to 1 kHz (True RMS)	40 Hz to 1 kHz (Averaging sense)[6]
AC current[5]	1000 µA[3]	0.1 µA	1.0 % + 3	1.2 % + 5
	10 mA[3]	0.001 mA	1.0 % + 3	1.2 % + 5
	100 mA[3]	0.01 mA	1.0 % + 3	1.2 % + 5
	1000 mA[1,3]	0.1 mA	1.0 % + 3	1.2 % + 5
	10 A[2,4]	0.001 A	1.2 % + 5[4]	1.2 % + 5

Notes
1. Current can be measured up to 440 mA continuously. Maximum of 20 hours for measuring current more than 440 mA and up to 600 mA. 100 mA and 600 mA ranges have thermal effect of 0.35 µA/mA to be offset after current applied to these ranges. Cool down the meter for at least 6 seconds if 100 mA was applied, and at least 3 minutes if 600 mA was applied; or alternatively use the NULL function to zero-out thermal effect with open test lead before measuring the signal.
2. Current can be measured up to 10 A continuously. Maximum of 30 seconds for measuring current more than 10 A to 20 A, add 0.3 % to specified accuracy. The multimeter needs to be cool down after measuring current that is more than 10 A. Cool down the meter for twice the duration of the measured time and use NULL function to zero-out thermal effect before proceeding with lower current measurement.
3. 1000 µA to 1000 mA ranges (connection with mA terminal) overload protection by 10 x 35 mm, 440 mA / 1000 V, 10 kA minimum fast-acting fuse.
4. 10 A ranges (connection with A terminal) overload protection by 10 x 38 mm, 11 A / 1000 V, 20 kA minimum fast-acting fuse.
5. Ensure good ventilation and no heat element close to the meter.
6. The averaging sense is calibrated for sine wave only. Add additional 0.05 counts / °C to accuracy from –20 0C to 18 0C or –28 °C to 55 °C.

Temperature specifications for U1241C / U1242C

Thermal type	Range	Resolution	Accuracy ± (% of reading + as specified below)
K	–200 °C to 1372 °C	0.1 °C	1 % + 1 °C
	–328 °F to 2502 °F	0.1 °F	1 % + 1.8 °F
J[7]	–210 °C to 1200 °C	0.1 °C	1 % + 1 °C
	–346 °F to 2192 °F	0.1 °F	1 % + 1.8 °F

Notes
1. The specification above is specified after 60 minutes of warm-up time.
2. The accuracy does not include the tolerance of the thermocouple probe.
3. Do not allow the temperature sensor to contact a surface hat is energized above 30 Vrms or 60 V DC. Such voltages pose a shock hazard.
4. Ensure the stable (within ± 1 °C) ambient temperature, and that the Null function is used to reduce the test lead's thermal effect and temperature offset. Before using Null function, set the multimeter to measure temperature without ambient compensation (°C) and keep the thermocouple probe as close to the multimeter as possible (avoid contact with any surface that has a different temperature from the ambient temperature).
5. When measuring temperature with respect to any temperature calibrator, try to set both the calibrator and multimeter with an external reference (without internal ambient compensation). If both the calibrator and multimeter are set with internal reference (with internal ambient compensation), some deviations may show between the readings of the calibrator and multimeter, due to differences in ambient compensation between the calibrator and multimeter. Keeping the multimeter close to the output terminal of calibrator will help reduce the deviation.
6. The temperature calculation is specified according to the safety standards of EN/IEC-60548-1 and NIST 175.
7. Only for U1242C.

Capacitance specifications for U1241C / U1242C

Range	Resolution	Accuracy ± (% of reading + counts of least significant digit)
1000 nF	0.1 nF	1.0 % + 5
10 µF	0.001 µF	1.0 % + 5
100 µF	0.01 µF	1.0 % + 5
1000 µF	0.01 µF	1.2 % + 5
10 mF	0.001 mF	1.2 % + 5

Notes
1. Overload protection: 1000 Vrms for short circuits with < 0.3 A current.
2. The accuracy for all ranges is specified based on a film capacitor or better, and after the Null function is used to subtract the test lead resistance and thermal effect (by shorting the test leads).
3. The maximum display is 12000 counts selectable

Frequency specifications for U1241C / U1242C

Range	Resolution	Accuracy ± (% of reading + counts of least significant digit)	Minimum input frequency
100.00 Hz	0.01 Hz	0.02 % + 1[1]	0.5 Hz
1000.0 Hz	0.1 Hz	0.02 % + 1	
10.000 kHz	0.001 kHz	0.02 % + 1	
100.00 kHz	0.01 kHz	0.02 % + 1	
1000.0 kHz	0.001 kHz	0.02 % + 1	
10.000 MHz	0.001 MHz	0.02 % + 1, < 1 MHz	

Notes
1. The frequency measurement is susceptible to error when measuring low-voltage, low-frequency signals. Shielding inputs from external noise pickup is critical for minimizing measurement errors. Turning on LPF (low pass filter) may help to filter out the noise and achieve a stable reading.

U1241C / U1242C sensitivity for voltage measurement

Input range	Minimum sensitivity (RMS sine wave)		
Maximum input[1] for specified accuracy	0.5 Hz to 20 kHz	20 kHz to 50 kHz	50 kHz to 100 kHz
100 mV[2]	15 mV	7.2 mV	15 mV
600 mV[2]	15 mV	7.2 mV	15 mV
1000 mV	125 mV	60 mV	125 mV
10 V	1.25 V	0.6 V	1.25 V
100 V	12.5 V	6 V	12.5 V
1000 V	60 V	60 V	60 V

U1241C / U1242C sensitivity for current measurement

Input range	Minimum sensitivity (RMS sine wave)	
Maximum input[1] for specified accuracy	0.5 Hz to 20 kHz	20 kHz to 30 kHz
100 µA	175 µA	60 µA
10 mV	1.75 mA	0.6 mA
100 mV	17.5 mA	6.0 mA
600 mV	100 mA	38 mA
10 A	N/A	1.15 A (< 10 kHz)

Notes
1. Refer to 'AC specification' for specified accuracy of maximum input.
2. 100 mV and 600 mV ranges available on Temperature T1 terminal.

Harmonic ratio for U1242C only

Range	Frequency	Voltage
0.0 % to 99.9 %	40 Hz to 1 kHz	100 mVAC to 1000 VAC

Multimeter data refresh rate

Function	Slow (times/second)	Fast (times/second)
ACV (V or mV)	5	40
DCV (V or mV)	5	40
Ω	5	40
Diode	5	40
Auto diode	1	
Capacitance	0.8 (<1000 µF)	-
DC µA, mA or A	5	40
AC µA, mA or A	5	40
Temperature	5	40
Frequency	1 (>10 Hz)	–

Ordering Information



U1241C



U1242C

Standard shipped accessories

4-digit handheld digital multimeter, test leads (red and black), infrared (IR)-to-USB cable, four AAA batteries, Quick Start Guide, certificate of calibration

Optional accessories

U1117A infrared(IR)-to-*Bluetooth* adapter
- Enable *Bluetooth* connection to Keysight handheld digital multimeters
- Up to 100 meter operating rage



U1115A remote logging display
- Displays up to 4 Keysight handheld digital multimeters measurements
- 60,000 points interval logging
- Extend measurement distance of up to 100-meter



U1595A rugged carrying case
- High quality, water and dust proof carrying case designed to store up to two handheld and accessories



U1583B AC current clamp
- Dual range 40 A and 400 A
- BNC-to-banana plug adapter provided for use with handheld digital multimeters



U1174A carrying case, soft
- For handheld digital multimeters



Optional accessories

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 probe (4-mm tips): CAT III 1000 V, CAT IV 600 V, 15 A
- Medium-sized alligator clips: CAT III 1000 V, CAT IV 600 V, 15 A
- 4-mm banana plugs: CAT II 600 V, 10 A



U1168B standard test lead kit
Includes two test leads (red and black), 4-mm test probes, alligator clips, fine-tip test probes, SMT grabbers and mini grabbers.
- Test leads: CAT III 1000 V, CAT IV 600 V, 15 A
- Test probe (19-mm tips): CAT II 1000 V, 15 A
- Test probe (4-mm tips): CAT III 1000 V, CAT IV 600 V, 15 A (highly recommended for CAT IV environment)
- Alligator clips: CAT III 1000 V, CAT IV 600 V, 15 A
- Fine-tip test p[robes: CAT II 300 V, 3 A
- SMT grabber: CAT II 300 V, 3 A
- Mini grabber: CAT II 300 V, 3 A



U1180A temperature sensors and probes
Includes thermocouple adapter, thermocouple bead J-type and thermocouple bead K-type.
- T/C adapter J/K type
- T/C bead J-type: –20 to 200 °C
- T/C bead K-type: –20 to 200 °C



U1181A immersion temperature probe
- Type K T/C for use in oil and other liquids
- Measurement range: –50 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 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 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 thermocouple (J-type) and temperature probe adapter
- T/C adapter J/K type
- T/C bead J-type: –20 to 200 °C



U1186A thermocouple (K-type) and temperature probe adapter
- T/C adapter J/K type
- T/C bead J-type: –20 to 200 °C



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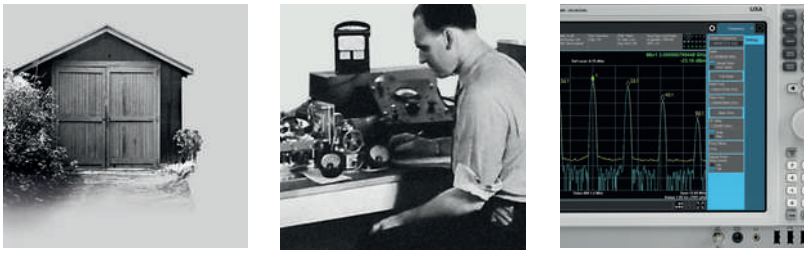

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