The Model 2100 USB Digital Multimeter is the newest member of Keithley’s family of high performance DMMs. Its high accuracy (58ppm), 6½-digit resolution is ideal for critical measurements. The Model 2100 features 11 measurement functions and 8 math functions to easily accommodate the most commonly measured parameters. All accessories, such as USB cable, probes, and software, are included with the Model 2100. With its unique combination of high precision and low total cost of ownership, the Model 2100 is an unbeatable value for R&D engineers, test engineers, scientists, and students making basic precision measurements on the bench and in system applications.

**High Precision, Low Cost**

The Model 2100 provides stability, accuracy, and speed at a very low cost. It has 0.0038% 1-year basic DC voltage accuracy on the 10V range and 0.013% 1-year basic resistance accuracy on the 10kΩ range. At 6½ digits, the Model 2100 delivers 50 triggered rdgs/s via the USB remote interface. At the fast 4½ digit setting, it reads over 2000 rdgs/s into its 2000 reading internal buffer.

The Model 2100 provides a wide number of measurement ranges and functions:

- DC voltage: 0.1V, 1V, 10V, 100V, and 1000V
- AC voltage: 0.1V, 1V, 10V, 100V, and 750V
- DC current: 10mA, 100mA, 1A, and 3A
- AC current: 1A and 3A
- Two- and four-wire resistance: 100Ω, 1kΩ, 10kΩ, 100kΩ, 1MΩ, 10MΩ, and 100MΩ
- Frequency: From 3Hz to 300kHz
- Period measurement
- Diode measurement
- Programmable A-D converter and filter settings for signal to noise optimization

Additionally, eight mathematical operations can be performed on measurement readings: RATIO, %, Min/Max, NULL, Limits, mX+b, dB, and dBm testing. Microsoft Office, Word, and Excel add-in tools allow remote storage and recall of the measured values from these applications. A graphing utility enables charting of measurements versus time for trending and noise observations.

The TMC compliant USB remote interface enables control from a PC for consistent test/calibration procedure execution and easy re-use of existing SCPI programs, including Agilent Model 34401A command emulation.

**Simple to Use**

The Model 2100 can be setup quickly and is very easy to use. It has a high contrast front panel and keypad that are intuitive and user-friendly. An easy to read 5×7 dot matrix, vacuum fluorescent display (VFD) offers three-color annunciators so users can easily distinguish each function symbol by its color.

**Strength and Versatility**

With its rugged construction and rubber bumpers, the Model 2100 has the durability to withstand bench, portable, or stacking applications. A sturdy carrying handle facilitates transportability.
2100

6½-Digit USB Digital Multimeter

Applications
The Model 2100 USB Digital Multimeter is ideal for applications in: electronic device, circuit, module, and product testing; low cost production testing of electrical and electronic components, sub-assemblies, and end products; and student lab assignments. Typical applications include:

• Test Engineers: Manual and semi-automatic electrical functional test
• Development Engineers: Electrical/electronic circuit and product validation
• Service/Calibration Technicians: Electronic product repair and calibration
• Research Scientists: Electrical and physics experiments testing
• Engineering Students: Electronic device and circuits experiment testing

Startup Software, PC Utilities Included
The KI-Tool application provides charting and graphing capabilities without programming to simplify setup, checkout, and basic measurement applications requiring graphical data representation. Scale, offset, and level can be adjusted to fine tune images for visual evaluation of signal and noise elements over time. It also includes tabular data and SCPI command prompt windows for maximum flexibility. Data sets can also be saved to disk files.

The Microsoft Excel Add-In utility is also included and provides quick data import into a standard Microsoft Excel spreadsheet, including selectable graphing, instrument settings, and number of data points collected. Data can then be analyzed through standard or optional Microsoft Excel functions, including graphical, statistical, and trend charting. A version supporting Microsoft Word is also included for direct data import into reports.

Accessories Supplied
Instruction manual on CD, Specifications, LabVIEW® Driver, Keithley I/O Layer, USB Cable, Power Cable, Safety Test Leads, KI-Tool, and KI-Link Add-in (both Microsoft Word and Excel versions)

ACCESSORIES AVAILABLE

RACK MOUNT KITS
4299-3 Single Rack Mount Kit
4299-4 Dual Rack Mount Kit
8605 High Performance Modular Test Leads
8606 High Performance Modular Probe Kit

SERVICES AVAILABLE

2100/120/120-3Y/EW 1 Year Factory Warranty extended to 3 years from date of shipment
C/2100/120/3Y/DATA 3 (ISO-17025 accredited) Calibrations within 3 years of purchase for Model 2100/120*
C/2100/120/3Y/ISO 3 (ISO-17025 accredited) Calibrations within 3 years of purchase for Model 2100/120*

*Not available in all countries
### 6½-Digit USB Digital Multimeter

#### Specifications

##### DC CHARACTERISTICS: Accuracy\(^1\) ±(% of reading + % of range)

<table>
<thead>
<tr>
<th>Function</th>
<th>Range</th>
<th>Resolution</th>
<th>Input Resistance</th>
<th>1 Year, 23°C ±5°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Voltage</td>
<td>100.0000 mV</td>
<td>0.1 µV</td>
<td>&gt;10 GΩ</td>
<td>0.0055 + 0.0040</td>
</tr>
<tr>
<td>DCI (DC Current)</td>
<td>100.0000 mA</td>
<td>10 nA</td>
<td>5.1 Ω</td>
<td>0.015 + 0.005</td>
</tr>
<tr>
<td>Resistance(^2)</td>
<td>100.0000 Ω</td>
<td>100 μΩ</td>
<td>100 μA</td>
<td>0.015 + 0.002</td>
</tr>
</tbody>
</table>

##### DC NOTES
1. Specifications valid after two hour warm-up.
2. Maximum lead resistance 10% of range per lead for 100 Ω and 1kΩ ranges; add 1kΩ per lead for all other ranges.
3. Test current set for continuous trigger operation.
4. Measurement rate set to 4 PLC.

##### MEASUREMENT NOISE REJECTION

<table>
<thead>
<tr>
<th>Rate</th>
<th>Digits</th>
<th>CMRR(^1)</th>
<th>NMRR(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10PLC</td>
<td>6½</td>
<td>140 dB</td>
<td>60 dB</td>
</tr>
<tr>
<td>1PLC</td>
<td>5½</td>
<td>140 dB</td>
<td>60 dB</td>
</tr>
</tbody>
</table>

1. For 1kΩ imbalance in LO lead.
2. For line frequency ±0.1%.

##### TEMPERATURE (RTD)

<table>
<thead>
<tr>
<th>RTD Type</th>
<th>Range</th>
<th>Resolution</th>
<th>4-Wire Accuracy(^1) 1 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum (PT100, PT585, PT3916)</td>
<td>-100°C to +100°C, 0.001°C</td>
<td>±0.03°C</td>
<td>±0.02°C</td>
</tr>
<tr>
<td>-200°C to +650°C, 0.001°C</td>
<td>±0.03°C</td>
<td>±0.02°C</td>
<td></td>
</tr>
</tbody>
</table>

1. Excluding probe errors. ±25°C ±5°C.
2100

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AC CHARACTERISTICS:
Accuracy ± (% of reading + % of range)

<table>
<thead>
<tr>
<th>Function</th>
<th>Range</th>
<th>Frequency (Hz)</th>
<th>1 Year (% of reading)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency and Period</td>
<td>100 mV to 750 V²</td>
<td>5–5</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5–40</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40–300k</td>
<td>0.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Function</th>
<th>Range</th>
<th>Resolution</th>
<th>Frequency (Hz)</th>
<th>1 Year (% of reading)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACV (AC TRMS Voltage)</td>
<td>100.00000 mV</td>
<td>0.1 µV</td>
<td>5–5</td>
<td>1.15 + 0.05</td>
</tr>
<tr>
<td></td>
<td>1.0000000 V to 750.0000 V²</td>
<td>1.0 µV</td>
<td>10–50</td>
<td>0.08 + 0.05</td>
</tr>
<tr>
<td></td>
<td>1.00000000 A</td>
<td>1 µA</td>
<td>5–5</td>
<td>1.10 + 0.05</td>
</tr>
<tr>
<td></td>
<td>3.00000000 A</td>
<td>10 µA</td>
<td>5–5</td>
<td>1.25 + 0.07</td>
</tr>
<tr>
<td>ACI (AC TRMS Current)</td>
<td>100.000000 A</td>
<td>1 µA</td>
<td>5–5</td>
<td>0.40 + 0.05</td>
</tr>
<tr>
<td></td>
<td>40–300k</td>
<td>0.1 µA</td>
<td>5–5</td>
<td>0.20 + 0.07</td>
</tr>
</tbody>
</table>

1. Specifications valid for two hour warm-up at 6½ digits.
2. Pure sine wave input greater than 5% of range.
3. 750VAC range is limited to 100kHz.

GENERAL

AC CMRR: 70dB (for 3kΩ unbalance I/O lead).
POWER SUPPLY: 120V/220V/240V.
POWER LINE FREQUENCY: 50/60Hz auto detected.
POWER CONSUMPTION: 25VA max.
DIGITAL I/O INTERFACE: USB-compatible Type B connection.
ENVIRONMENT: For indoor use only.
OPERATING TEMPERATURE: 5° to 40°C.
OPERATING HUMIDITY: Maximum relative humidity 80% for temperature up to 31°C, decreasing linearly to 50% relative humidity at 40°C.
OPERATING ALTITUDE: Up to 2000m above sea level.
BENCH DIMENSIONS (with handles and feet): 112mm high × 256mm wide × 375mm deep (4.4 in. × 10.1 in. × 14.75 in.).
WEIGHT: 4.1 kg (9 lbs.).
WARRANTY: One year.