# Digital Multimeters

## Tektronix DMM4020 Data Sheet

DMM4020

## Features & Benefits

### Key Performance Specifications

- 5.5 Digit Resolution
- Basic VDC Accuracy of up to 0.015% (1 yr.)
- 200 mV to 1000 V Voltage Range, with up to 10 µV Resolution
- 200 µA to 10 A Current Range, with up to 1 nA Resolution
- 200 Ω to 100 MΩ Ohm Range, with up to 1 mΩ Resolution
- CAT I 1000 V, CAT II 600 V

### Available Functions and Features

- Volts, Ohms, and Amps Measurements
- Diode and Continuity Testing
- Frequency Measurements
- 2×4 Ohms 4-wire Measurement Technique
- Dedicated DC Leakage Current Measurements
- Six Dedicated Buttons for Fast Access to Instrument Setups
- Limit Compare Mode for Pass/Fail Testing

### Connectivity

- Front 2×4 Measurement Inputs
- RS-232 on Rear Panel for Quick PC Connectivity
- Includes USB to RS-232 Interface Adapter Cable
- Includes National Instrument's LabVIEW SignalExpress™ TE Limited Edition for Connecting Your Bench

### 3-year Warranty

Tektronix®

## Measurements with the Push of a Button

As the circuits in embedded system designs become more sophisticated, you must measure a multitude of different parameters to validate your design. The Tektronix DMM4020 5.5 digit bench multimeter offers a broad range of functions in one easy-to-use instrument.

Typical multimeter measurements – volts, ohms, and amps – are made with a basic VDC accuracy of up to 0.015%, ensuring you have the performance you need for your design. You can also use the DMM4020 to measure frequency, and to perform continuity and diode tests. This allows you to replace your counter, continuity tester, and DMM with one versatile instrument, saving bench space and cost.

## Measure Nanoampere Signals

Measuring standby current in today's energy-efficient designs requires looking at very low currents, often in the microamp or nanoamp range. Using a traditional multimeter for this measurement can lead to inaccurate results since they typically employ the shunt resistance technique for measuring current.

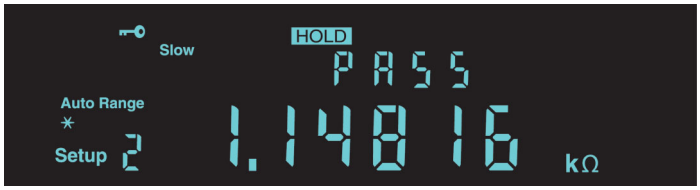
The DMM4020 offers an improved method for measuring low currents. By using a current-to-voltage op amp technique, the DMM4020 can make current measurements with 1 nA of resolution and with minimal loading affect on the circuit under test, giving results that reflect real-world operation of the device.

## Designed to Make Your Work Easier

The DMM4020 multimeter is designed with the ease-of-use and familiar operation you expect from Tektronix.

### Intuitive Operation

Dedicated front-panel buttons provide fast access to frequently used functions and parameters, reducing setup time. You no longer need to search through software menus to find the function you need.




Limit compare mode on the DMM4020.

### Setup Buttons for Your Common Measurements

With six setup buttons on the front panel, you can save the settings for your most common measurements. Simply set up the meter for a measurement, then press shift followed by a setup button to save the measurement settings. Now each time you perform that measurement, you simply press the appropriate setup key.

### Dual Display

With the unique dual display, you can measure two different parameters of the same signal from one test connection.

### Limit Compare

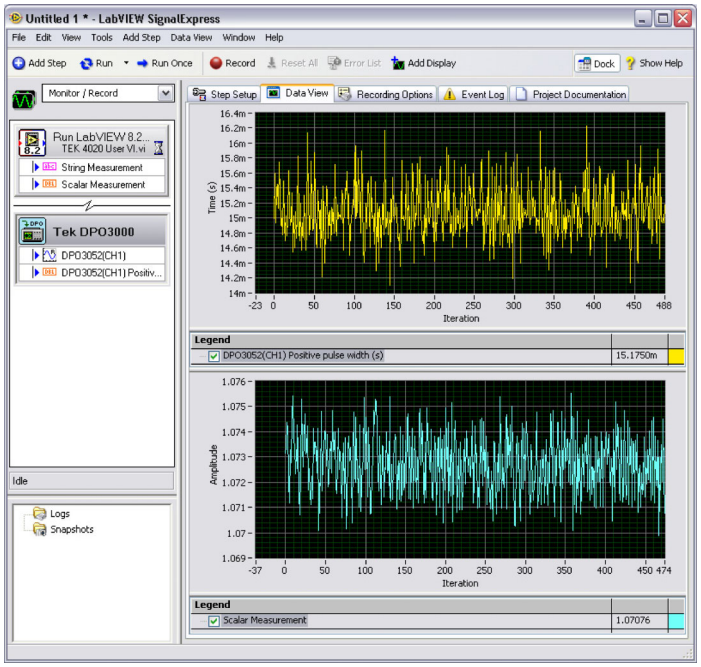
The limit compare mode provides pass/fail indicators to quickly show if a test passes or fails to help eliminate mistakes, especially for results that are close to the limit.

### Simple and Accurate 4-wire Measurements

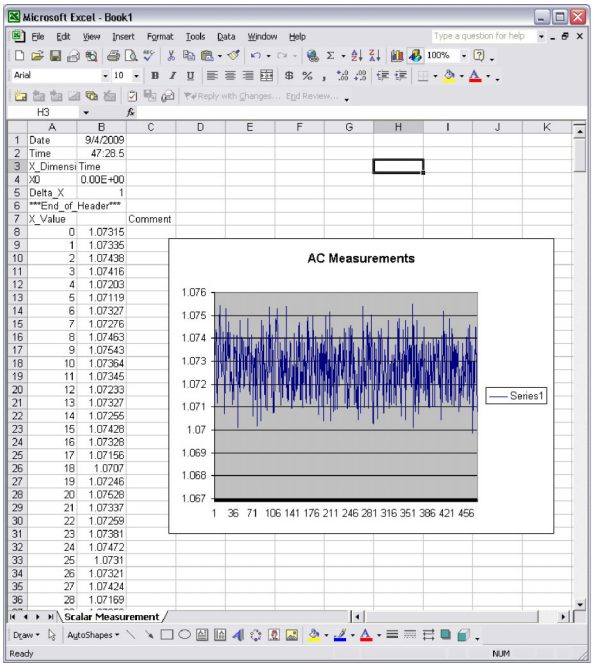
Patented split terminal jacks for the 2×4 ohms function allow you to perform 4-wire measurements using only two leads instead of four. Special test lead accessories are available to enable you to establish the connection. You get excellent resolution and accuracy plus the convenience and ease of using a single pair of leads.

### Easy Connectivity to Your PC

The RS-232 port on the back panel can be used to connect to your PC. A USB to RS-232 interface adapter cable is included standard with the DMM4020 for connecting to your PC's USB port.




Signal Express acquiring data from Tektronix DMM4020 and DPO3052.




Signal Express used to export DMM4020 data into Excel.

## Connect Your Bench for Intelligent Debug

Easily capture, save, and analyze measurement results from your multimeter with the special Tektronix Edition of National Instrument's LabVIEW SignalExpress™ software. Every DMM4020 multimeter ships with a free copy of the Limited Edition version of SignalExpress for basic instrument control, data logging, and analysis. The optional Professional Edition offers over 200 built-in functions that provide additional signal processing, advanced analysis, sweeping, limit testing, and user-defined step capabilities.

SignalExpress supports the range of Tektronix bench instruments*[1], enabling you to connect your entire test bench. You can then access the feature-rich tools packed into each instrument from one intuitive software interface. This allows you to automate complex measurements requiring multiple instruments, log data for an extended period of time, time-correlate data from multiple instruments, and easily capture and analyze your results, all from your PC. Only Tektronix offers a connected test bench of intelligent instruments to simplify and speed debug of your complex design.

## Performance You Can Count On

In addition to industry-leading service and support, every DMM4020 multimeter comes backed with a three-year standard warranty.

*[1] NI LabVIEW Signal Express supports the following Tektronix instruments: MSO/DPO4000/3000/2000 Series oscilloscopes, TDS3000C/2000B/1000B Series oscilloscopes, AFG3000 Series arbitrary/function generators, DMM4050/4040/4020 Series digital multimeters.

# Characteristics

## General Specifications

### Voltage

| Characteristic | Description |
|---|---|
| 100V Setting | 90 V to 110 V |
| 120V Setting | 108 V to 132 V |
| 220V Setting | 198 V to 242 V |
| 240V Setting | 216 V to 264 V |
| Frequency | 47 Hz to 440 Hz |
| Power Consumption | 15 VA peak (10 W average) |

### Dimensions

| Dimension | mm | in. |
|---|---|---|
| Height | 88 | 3.46 |
| Width | 217 | 8.56 |
| Depth | 297 | 11.7 |
| **Weight** | **kg** | **lb.** |
| Net | 2.1 | 4.6 |

### Display

Vacuum Fluorescent Display, segment

### Environment

| Characteristic | Description |
|---|---|
| Temperature | |
| Operating | 0 °C to 50 °C |
| Storage | -40 °C to 70 °C |
| Warm Up | ½ hour to full uncertainty specifications |
| Relative Humidity (noncondensing) | |
| Operating | Uncontrolled (<10 °C)<br><90% (10 °C to 28 °C)<br><75% (28 °C to 40 °C)<br><45% (40 °C to 50 °C) |
| Storage | <95% (-40 °C to 70 °C) |
| Altitude | |
| Operating | 2,000 meters |
| Storage | 12,000 meters |
| Vibration | Complies with MIL-PRF-28800F Class 3 |
| Safety | Complies with IEC 61010-1:2001, ANSI/ISA 61010-1 (S82.02.01):2004, UL 61010-1:2004, CAN/CSA C22.2 No. 61010.1:2004, CAT I 1000V / CAT II 600 V |
| EMC | Designed to comply with IEC 61326-1:1997+A1:1998+A2:2000 |

### Triggering

| Characteristic | Description |
|---|---|
| Trigger Delay | 400 ms |
| External Trigger Delay | <2 ms |
| External Trigger Jitter | <1 ms |
| Trigger Input | TTL Levels |
| Trigger Output | 5 V max |

### Math Functions

Min/max, relative, hold, compare, and dB functions

### Electrical

| Characteristic | Description |
|---|---|
| Input Protection | 1000 V all ranges |
| Overrange | 10% on the largest ranges of all functions except continuity and diode test |

### Remote Interfaces

RS-232C (RS-232 to USB Adapter cable included)

### Warranty

Three years

## Electrical Specifications

### DC Voltage Specifications

Specifications are valid for 5½ digit mode and after at least a half-hour warm-up.

| Characteristic | Description |
|---|---|
| Maximum Input | 1000 V on any range |
| Common Mode Rejection | 120 dB at 50 or 60 Hz 0.1% (1 kΩ unbalance) |
| Normal Mode Rejection | 80 dB at Slow Rate |
| A/D Nonlinearity | 15 ppm of range |
| Input Bias Current | <30 pA at 25 °C |
| Settling Considerations | Measurement settling times are affected by source impedance, cable dielectric characteristics, and input signal changes |

#### Input Characteristics

| Range | Full Scale (5½ Digits) | Resolution | | | Input Impedance |
|---|---|---|---|---|---|
| | | Slow | Medium | Fast | |
| 200 mV | 199.999 mV | 1 V | 10 µV | 10 µV | >10 GΩ*2 |
| 2 V | 1.99999 V | 10 µV | 100 µV | 100 µV | >10 GΩ*2 |
| 20 V | 19.9999 V | 100 µV | 1000 µV | 1000 µV | 10 MΩ ±1% |
| 200 V | 199.999 V | 1 mV | 10 mV | 10 mV | 10 MΩ ±1% |
| 1000 V | 1000.00 V | 10 mV | 100 mV | 100 mV | 10 MΩ ±1% |

*2 At some dual-display measurements, the input impedance of 200 mV and 2 V ranges may be changed to 10 MΩ.

#### Accuracy

| Range | Uncertainty*3 | | Temperature Coefficient/°C Outside 18 – 28 °C |
|---|---|---|---|
| | 90 days | 1 year | |
| | 23 °C ±5 °C | 23 °C ±5 °C | |
| 200 mV | 0.01 + 0.003 | 0.015 + 0.004 | 0.0015 + 0.0005 |
| 2 V | 0.01 + 0.002 | 0.015 + 0.003 | 0.001 + 0.0005 |
| 20 V | 0.01 + 0.003 | 0.015 + 0.004 | 0.0020 + 0.0005 |
| 200 V | 0.01 + 0.002 | 0.015 + 0.003 | 0.0015 + 0.0005 |
| 1000 V | 0.01 + 0.002 | 0.015 + 0.003 | 0.0015 + 0.0005 |

*3 Uncertainty given as ±(% of reading + % of range).

## AC Voltage Specifications

AC Voltage specifications are for AC sinewave signals >5% of range. For inputs from 1% to 5% of range and <50 kHz, add an additional error of 0.1% of range, and for 50 kHz to 100 kHz, add 0.13% of range.

| Characteristic | Description |
|---|---|
| Maximum Input | 750 $V_{RMS}$ or 1000 V peak or 8 × $10^7$ Volts-Hertz product |
| Measurement Method | AC-coupled true RMS. Measures the AC component of input with up to 1000 VDC bias on any range |
| AC Filter Bandwidth | 20 Hz – 100 kHz |
| Common Mode Rejection | 60 dB at 50 Hz or 60 Hz (1 kΩ unbalance) |
| Maximum Crest Factor | 3:1 at Full Scale |
| Additional Crest Factor Errors (<100 Hz) | Crest Factor 1-2, 0.05% of full scale<br>Crest Factor 2-3, 0.2% of full scale<br>**Only applies for non-sinusoid signals** |

### Input Characteristics

| Range | Full Scale (5½ Digits) | Resolution | | | Input Impedance |
|---|---|---|---|---|---|
| | | Slow | Medium | Fast | |
| 200 mV | 199.999 mV | 1 µV | 10 µV | 10 µV | 1 MΩ ±2% shunted by <100 pf |
| 2 V | 1.99999 V | 10 µV | 100 µV | 100 µV | |
| 20 V | 19.9999 V | 100 µV | 1000 µV | 1000 µV | |
| 200 V | 199.999 V | 1 mV | 10 mV | 10 mV | |
| 750 V | 750.00 V | 10 mV | 100 mV | 100 mV | |

### Accuracy

| Range | Frequency | Uncertainty*[3] | | Temperature Coefficient/°C Outside 18 – 28 °C |
|---|---|---|---|---|
| | | 90 days | 1 year | |
| | | 23 °C ±5 °C | 23 °C ±5 °C | |
| 200 mV | 20 Hz – 45 Hz | 0.8 + 0.05 | 0.9 + 0.05 | 0.01 + 0.005 |
| | 45 Hz – 20 kHz | 0.15 + 0.05 | 0.2 + 0.05 | 0.01 + 0.005 |
| | 20 kHz – 50 kHz | 0.3 + 0.05 | 0.35 + 0.05 | 0.01 + 0.005 |
| | 50 kHz – 100 kHz | 0.8 + 0.05 | 0.9 + 0.05 | 0.05 + 0.01 |
| 2 V | 20 Hz – 45 Hz | 0.8 + 0.05 | 0.9 + 0.05 | 0.01 + 0.005 |
| | 45 Hz – 20 kHz | 0.15 + 0.05 | 0.2 + 0.05 | 0.01 + 0.005 |
| | 20 kHz – 50 kHz | 0.3 + 0.05 | 0.35 + 0.05 | 0.01 + 0.005 |
| | 50 kHz – 100 kHz | 0.8 + 0.05 | 0.9 + 0.05 | 0.05 + 0.01 |
| 20 V | 20 Hz – 45 Hz | 0.8 + 0.05 | 0.9 + 0.05 | 0.01 + 0.005 |
| | 45 Hz – 20 kHz | 0.15 + 0.05 | 0.2 + 0.05 | 0.01 + 0.005 |
| | 20 kHz – 50 kHz | 0.3 + 0.05 | 0.35 + 0.05 | 0.01 + 0.005 |
| | 50 kHz – 100 kHz | 0.8 + 0.05 | 0.9 + 0.05 | 0.05 + 0.01 |
| 200 V | 20 Hz – 45 Hz | 0.8 + 0.05 | 0.9 + 0.05 | 0.01 + 0.005 |
| | 45 Hz – 20 kHz | 0.15 + 0.05 | 0.2 + 0.05 | 0.01 + 0.005 |
| | 20 kHz – 50 kHz | 0.3 + 0.05 | 0.35 + 0.05 | 0.01 + 0.005 |
| | 50 kHz – 100 kHz | 0.8 + 0.05 | 0.9 + 0.05 | 0.05 + 0.01 |
| 750 V | 20 Hz – 45 Hz | 0.8 + 0.05 | 0.9 + 0.05 | 0.01 + 0.005 |
| | 45 Hz – 20 kHz | 0.15 + 0.05 | 0.2 + 0.05 | 0.01 + 0.005 |
| | 20 kHz – 50 kHz | 0.3 + 0.05 | 0.35 + 0.05 | 0.01 + 0.005 |
| | 50 kHz – 100 kHz | 0.8 + 0.05 | 0.9 + 0.05 | 0.05 + 0.01 |

*[3] Uncertainty given as ±(% of reading + % of range).

## Resistance

Specifications are for 4-wire resistance function, or 2-wire resistance with REL. If REL is not used, add 0.2 Ω for 2-wire resistance plus lead resistance.

| Characteristic | Description |
|---|---|
| Measurement Method | Current source referenced to LO input |
| Max Lead Resistance (4-wire ohms) | 10% of range per lead for 200 Ω, 2 kΩ ranges. 1 kΩ per lead on all other ranges. |
| Input Protection | 1000 V on all ranges |

### Input Characteristics

| Range | Full Scale (5½ Digits) | Resolution | | | Current Source |
|---|---|---|---|---|---|
| | | Slow | Medium | Fast | |
| 200 Ω | 199.999 Ω | 0.001 Ω | 0.01 Ω | 0.01 Ω | 0.8 mA |
| 2 kΩ | 1.99999 kΩ | 0.01 Ω | 0.1 Ω | 0.1 Ω | 0.8 mA |
| 20 kΩ | 19.9999 kΩ | 0.1 Ω | 1 Ω | 1 Ω | 0.08 mA |
| 200 kΩ | 199.999 kΩ | 1 Ω | 10 Ω | 10 Ω | 0.008 mA |
| 2 MΩ | 1.99999 MΩ | 10 Ω | 100 Ω | 100 Ω | 0.9 µA |
| 20 MΩ | 19.9999 MΩ | 100 Ω | 1 kΩ | 1 kΩ | 0.16 µA |
| 100 MΩ | 100.000 MΩ | 1 kΩ | 10 kΩ | 10 kΩ | 0.16 µA \|\| 10 MΩ |

### Accuracy

| Range | Uncertainty*[3] | | Temperature Coefficient/°C Outside 18 – 28 °C |
|---|---|---|---|
| | 90 days | 1 year | |
| | 23 °C ±5 °C | 23 °C ±5 °C | |
| 200 Ω | 0.02 + 0.004 | 0.03 + 0.004 | 0.003 + 0.0006 |
| 2 kΩ | 0.015 + 0.002 | 0.02 + 0.003 | 0.003 + 0.0005 |
| 20 kΩ | 0.015 + 0.002 | 0.02 + 0.003 | 0.003 + 0.0005 |
| 200 kΩ | 0.015 + 0.002 | 0.02 + 0.003 | 0.003 + 0.0005 |
| 2 MΩ | 0.03 + 0.003 | 0.04 + 0.004 | 0.004 + 0.0005 |
| 20 MΩ | 0.2 + 0.003 | 0.25 + 0.003 | 0.01 + 0.0005 |
| 100 MΩ | 1.5 + 0.004 | 1.75 + 0.004 | 0.2 + 0.0005 |

*[3] Uncertainty given as ±(% of reading + % of range).

## DC Current

| Characteristic | Description |
|---|---|
| Input Protection | Tool-accessible 11 A / 1000 V and 440 mA / 1000 V fuses |
| Shunt Resistance | 0.01 Ω for 2 A and 10 A ranges<br>1 Ω for 20 mA and 200 mA<br>Burden voltage <5 mV for 200 µA and 2 mA range |

### Input Characteristics

| Range | Full Scale (5½ Digits) | Resolution | | | Burden Voltage |
|---|---|---|---|---|---|
| | | Slow | Medium | Fast | |
| 200 µA | 199.999 µA | 0.001 µA | 0.01 µA | 0.01 µA | <5 mV |
| 2 mA | 1999.99 µA | 0.01 µA | 0.1 µA | 0.1 µA | <5 mV |
| 20 mA | 19.9999 mA | 0.1 µA | 1 µA | 1 µA | <0.05 V |
| 200 mA | 19.9999 mA | 1 µA | 10 µA | 10 µA | <0.5 V |
| 2 A | 1.99999 A | 10 µA | 100 µA | 100 µA | <0.1 V |
| 10 A | 10.0000 A | 100 µA | 1 mA | 1 mA | <0.5 V |

### Accuracy

| Range | Uncertainty*[3] | | Temperature Coefficient/°C Outside 18 – 28 °C |
|---|---|---|---|
| | 90 days | 1 year | |
| | 23 °C ±5 °C | 23 °C ±5 °C | |
| 200 µA | 0.02 + 0.005 | 0.03 + 0.005 | 0.003 + 0.001 |
| 2 mA | 0.015 + 0.005 | 0.02 + 0.005 | 0.002 + 0.001 |
| 20 mA | 0.03 + 0.02 | 0.04 + 0.02 | 0.005 + 0.001 |
| 200 mA | 0.02 + 0.005 | 0.03 + 0.008 | 0.005 + 0.001 |
| 2 A | 0.05 + 0.02 | 0.08 + 0.02 | 0.008 + 0.001 |
| 10 A | 0.18 + 0.01 | 0.2 + 0.01 | 0.008 + 0.001 |

*[3] Uncertainty given as ±(% of reading + % of range).

## AC Current

The following AC current specifications are for sinusoidal signals with amplitudes greater than 5% of range. For inputs from 1% to 5% of range, add an additional error of 0.1% of range.

| Characteristic | Description |
|---|---|
| Input Protection | Tool-accessible 11 A / 1000 V and 440 mA / 1000 V fuses |
| Measurement Method | AC-coupled true RMS |
| Shunt Resistance | 0.01 Ω for 2 A and 10 A ranges<br>1 Ω for 20 mA and 200 mA |
| AC Filter Bandwidth | 20 Hz – 100 kHz |
| Maximum Crest Factor | 3:1 at Full Scale |
| Additional Crest Factor Errors (<100 Hz) | Crest Factor 1-2, 0.05% of full scale<br>Crest Factor 2-3, 0.2% of full scale<br>**Only applies to non-sinusoid signals** |

### Input Characteristics

| Range | Full Scale (5½ Digits) | Resolution | | | Burden Voltage |
|---|---|---|---|---|---|
| | | Slow | Medium | Fast | |
| 20 mA | 19.9999 mA | 0.1 µA | 1 µA | 1 µA | <0.05 V |
| 200 mA | 199.999 mA | 1 µA | 10 µA | 10 µA | <0.5 V |
| 2 A | 1.99999 A | 10 µA | 100 µA | 100 µA | <0.1 V |
| 10 A | 10.0000 A | 100 µA | 1 mA | 1 mA | <0.5 V |

### Accuracy

| Range | Frequency | Uncertainty*3 | | Temperature Coefficient/°C Outside 18 – 28 °C |
|---|---|---|---|---|
| | | 90 days | 1 year | |
| | | 23 °C ±5 °C | 23 °C ±5 °C | |
| 20 mA | 20 Hz - 45 Hz | 1 + 0.05 | 1.25 + 0.06 | 0.015 + 0.005 |
| | 45 Hz - 2 kHz | 0.25 + 0.05 | 0.3 + 0.06 | 0.015 + 0.005 |
| 200 mA | 20 Hz - 45 Hz | 0.8 + 0.05 | 1 + 0.06 | 0.015 + 0.005 |
| | 45 Hz - 2 kHz | 0.25 + 0.05 | 0.3 + 0.06 | 0.015 + 0.005 |
| 2 A | 20 Hz - 45 Hz | 1 + 0.05 | 1.25 + 0.06 | 0.015 + 0.005 |
| | 45 Hz - 2 kHz | 0.25 + 0.05 | 0.3 + 0.06 | 0.015 + 0.005 |
| 10 A | 20 Hz - 45 Hz | 1 + 0.1 | 1.25 + 0.12 | 0.015 + 0.005 |
| | 45 Hz - 2 kHz | 1 + 0.1 | 0.5 + 0.12 | 0.015 + 0.005 |

*3 Uncertainty given as ±(% of reading + % of range).

## Frequency

| Characteristic | Description |
|---|---|
| Gate Time | 131 ms |
| Measurement Method | AC-coupled input using the AC voltage measurement function |
| Settling Considerations | When measuring frequency after a DC offset voltage change, errors may occur. For the most accurate measurement, wait up to 1 second to allow input-blocking RC time constant to settle |
| Measurement Considerations | To minimize measurement errors, shield inputs from external noise when measuring low-voltage, low-frequency signals |

### Input Characteristics

| Range | Frequency | Uncertainty | | Temperature Coefficient/°C Outside 18 – 28 °C |
|---|---|---|---|---|
| | | 90 days | 1 year | |
| | | 23 °C ±5 °C | 23 °C ±5 °C | |
| 100 mV to 750 V*[4, 5] | 20 Hz – 2 kHz | 0.01 + 0.002 | 0.01 + 0.003 | 0.002 + 0.001 |
| | 2 kHz – 20 kHz | 0.01 + 0.002 | 0.01 + 0.003 | 0.002 + 0.001 |
| | 20 kHz – 200 kHz | 0.01 + 0.002 | 0.01 + 0.003 | 0.002 + 0.001 |
| | 200 kHz – 1 MHz | 0.01 + 0.004 | 0.01 + 0.006 | 0.002 + 0.002 |

*[4] Input >100 mV.

*[5] Limited to $8 \times 10^7$ V Hz.

## Continuity

| Characteristic | Description |
|---|---|
| Continuity Threshold | 20 Ω |
| Test Current | 1 mA |
| Response Time | 100 S/s with audible tone |
| Rate | Fast |
| Maximum Reading | 199.99 Ω |
| Resolution | 0.01 Ω |

## Diode Test

| Characteristic | Description |
|---|---|
| Response Time | 100 S/s with audible tone |
| Rate | Fast |
| Maximum Reading | 1.9999 V |
| Resolution | 0.1 mV |

# Ordering Information

### Models

| Model | Description |
|---|---|
| DMM4020 | 5.5 Digit Multimeter |

**DMM4020 Includes**: Meter, TL710 test leads, line cord, spare line fuse, statement of cal practices, Warranty statement, Safety and Installation Guide, Connectivity Installation Manual, CD-ROM with user manual (English, French, Italian, German, Spanish, Simplified Chinese, Traditional Chinese, Korean, Russian, Japanese), RS-232 to USB Adapter Cable, National Instruments LabVIEW SignalExpress™ Tektronix Edition, Limited Edition Software.

Please specify power plug when ordering.

### Instrument Options

### Power Plug Options

| Option | Description |
|---|---|
| Opt. A0 | North America |
| Opt. A1 | Universal Euro |
| Opt. A2 | United Kingdom |
| Opt. A3 | Australia |
| Opt. A5 | Switzerland |
| Opt. A6 | Japan |
| Opt. A10 | China |
| Opt. A11 | India |
| Opt. A99 | No power cord |
| Opt. E1 | Euro and UK power cords |

### Service Options*6

| Option | Description |
|---|---|
| Opt. CA1 | Provides a single calibration event or coverage for the designated calibration interval, whichever comes first |
| Opt. C3 | Calibration Service 3 Years |
| Opt. C5 | Calibration Service 5 Years |
| Opt. D1 | Calibration Data Report |
| Opt. R5 | Repair Service 5 Years (including warranty) |

*6 Test Leads and accessories are not covered by the DMM warranty and Service Offerings. Refer to the datasheet of each Test Lead and accessory model for its unique warranty and calibration terms.

### Recommended Accessories and Software

| Accessory | Description |
|---|---|
| Calibration Manual | 077-0365-xx |
| TL710 | Premium Test Leads (196-3250-xx) |
| TL705 | 2×4 Wire Ohm 1000 V Precision Test Lead |
| TL725 | 2×4 Wire Ohm SMD Test Tweezers |
| AC4000 | Soft Transit Case |
| HCTEK4321 | Hard Carrying Case |
| Y8846S | Single Rackmount Kit |
| Y8846D | Dual Rackmount Kit |
| 013-0369-xx | Calibration Fixture 4-terminal short |
| SIGEXPTE | NI LabVIEW SignalExpress Tektronix Edition Software – Full Version |

CE

ISO 9001 Product(s) are manufactured in ISO registered facilities.

GPIB IEEE-488 Product(s) complies with IEEE Standard 488.1-1987 and RS-232C.

**Contact Tektronix:**

**ASEAN / Australasia** (65) 6356 3900

**Austria** +41 52 675 3777

**Balkans, Israel, South Africa and other ISE Countries** +41 52 675 3777

**Belgium** 07 81 60166

**Brazil** +55 (11) 3759-7627

**Canada** 1 (800) 661-5625

**Central East Europe, Ukraine, and the Baltics** +41 52 675 3777

**Central Europe & Greece** +41 52 675 3777

**Denmark** +45 80 88 1401

**Finland** +41 52 675 3777

**France** +33 (0) 1 69 86 81 81

**Germany** +49 (221) 94 77 400

**Hong Kong** (852) 2585-6688

**India** (91) 80-42922600

**Italy** +39 (02) 25086 1

**Japan** 81 (3) 6714-3010

**Luxembourg** +44 (0) 1344 392400

**Mexico, Central/South America & Caribbean** 52 (55) 54247900

**Middle East, Asia, and North Africa** +41 52 675 3777

**The Netherlands** 090 02 021797

**Norway** 800 16098

**People's Republic of China** 86 (10) 6235 1230

**Poland** +41 52 675 3777

**Portugal** 80 08 12370

**Republic of Korea** 82 (2) 6917-5000

**Russia & CIS** +7 (495) 7484900

**South Africa** +27 11 206 8360

**Spain** (+34) 901 988 054

**Sweden** 020 08 80371

**Switzerland** +41 52 675 3777

**Taiwan** 886 (2) 2722-9622

**United Kingdom & Ireland** +44 (0) 1344 392400

**USA** 1 (800) 426-2200

For other areas contact Tektronix, Inc at: 1 (503) 627-7111

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**For Further Information.** Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit **www.tektronix.com**

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Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

**Данный компонент на территории Российской Федерации**

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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

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**Офис по работе с юридическими лицами:**

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9