



Description

The 5065 is a high performance, versatile 6½ digit bench multimeter with 19 measurement functions. Low cost, simple operation, stability, and high accuracy make the 5065 an ideal DMM for a variety of applications. In addition high speed means both the sampling rate and the data transfer rate can achieve 2000 readings per second.

The comprehensive range of features makes the 5065 suitable for test engineers, R&D, service, and calibration technicians. The durable construction with a protective rubber guard and carry handle allows convenient benchtop use, and transportability. A soft carry case is available as an option.

The front panel features a two-line, colour-coded display for easy to read measurements and functions. Control is simple, with common functions selected from a single button press.

The 5065 measures AC/DC voltage, AC/DC current, 2 and 4 wire resistance, frequency, period, diode, continuity, thermocouples and RTD. In addition to standard functions many other capabilities such as Min/Max, Ratio/% and Null are included. Memory functions with up to 2000 readings can be stored and recalled. Limit testing with an external output can be configured to signal pass or fail.

The USB interface enables connectivity to a PC. A basic setup and graphing application is supplied as standard. Add-in utilities for Microsoft Excel and Word allow simple data collection directly into a spreadsheet or document. An optional 10 channel scanner card is available which allows multiple inputs to be measured. Further options include test lead sets, GPIB interface, and an RTD probe adaptor.

Applications

The 5065 is ideal for applications ranging from testing and calibration to education. In R&D and production environments it can be used to check and test electronic devices, circuitry and components. It can also be utilised to make automated measurements for product validation. In calibration the 5065 is an accurate multimeter for testing electrical and electronic sources. It can also be used for signal measurements on process instrumentation such as transmitters, RTDs and thermocouples. Further applications include repair and service work, and experimental testing work in education and engineering.

Features

- 6½ digit resolution
- DC voltage: 0.1 V, 1 V, 10 V, 100 V, and 1000 V
- AC voltage: 0.1 V, 1 V, 10 V, 100 V, and 750 V
- DC current: 10 mA, 100 mA, 1 A, and 3 A
- AC current: 1 A and 3 A
- Two and four wire resistance
- Frequency from 3 Hz to 300 kHz
- Period measurement, diode measurement
- Temperature measurements
- RS-232 and USB interface, optional GPIB
- 10 channel scanner card option
- PC/laptop control via EasyCal software

EasyCal Calibration Software

The 5065 can be controlled via Time Electronics EasyCal software to automate the calibration process. This provides increased speed of calibration and consistency of results. Produce traceable calibration certificates and test reports for quality standards with additional uncertainty information for ISO 17025 conformance.





Technical Specifications

Specifications are for 1 year ± (% of reading + % of range) (23 °C ± 5 °C).

DC Voltage

Range	Resolution	Input resistance	Accuracy
100.0000 mV	0.1 μV	> 10 GΩ	0.0050 + 0.0035
1.000000 V	1.0 μV	> 10 GΩ	0.0040 + 0.0007
10.00000 V	10 μV	> 10 GΩ	0.0035 + 0.0005
100.0000 V	100 μV	10 MΩ	0.0045 + 0.0006
1000.000 V	1 mV	10 MΩ	0.0045 + 0.0010

DC Current

Range	Resolution	Shunt resistance	Accuracy
10.00000 mA	10 nA	5.1 Ω	0.05 + 0.02
100.0000 mA	100 nA	5.1 Ω	0.05 + 0.005
1.000000 A	1 μA	0.1 Ω	0.1 + 0.01
3.00000 A	10 μA	0.1 Ω	0.12 + 0.02

Resistance

Range	Resolution	Test current	Accuracy
100.0000 Ω	100 μΩ	1 mA	0.01 + 0.005
1.000000 kΩ	1 mΩ	1 mA	0.01 + 0.002
10.00000 kΩ	10 mΩ	100 μA	0.01 + 0.002
100.0000 kΩ	100 mΩ	10 μA	0.01 + 0.002
1.000000 MΩ	1 Ω	5 μA	0.01 + 0.002
10.00000 MΩ	10 Ω	500 nA	0.04 + 0.002
100.0000 MΩ	100 Ω	500 nA	0.8 + 0.02

Specification applies to 4 wire mode. 2 wire specifications are x2 the stated accuracy and do not include external lead resistance.

Diode test

1.0000 V	10 μV	1 mA	0.01 + 0.02
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Continuity

1000.00 KΩ	10 mΩ	1 mA	0.01 + 0.03
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Temperature

RTD

Pt100, D100, F100, Pt385 or Pt3916 (Best accuracy ± 0.08 °C).

Thermocouple

J, K, N, T & E (Accuracy ± 0.5 °C). R & S (Accuracy ± 5 °C).

Ordering Information

5065.....Digital Multimeter
 9714.....10 channel scanner card
 9715.....GPIB interface (replaces standard fitted RS-232 interface)
 9717.....RTD probe adaptor
 9713.....Carry case with test lead compartment
 9541.....Basic test lead set

AC Voltage

Range	Resolution	Frequency (Hz)	Accuracy
100.0000 mV	0.1 μV	3 to 5	1.00 + 0.04
		5 to 10	0.35 + 0.04
		10 to 20 k	0.06 + 0.04
		20 k to 50 k	0.12 + 0.05
		50 k to 100 k	0.60 + 0.08
		100 k to 300 k	4.00 + 0.50
1.000000 V to 750.000 V	1.0 μV to 1 mV	3 to 5	1.00 + 0.03
		5 to 10	0.35 + 0.03
		10 to 20 k	0.06 + 0.03
		20k to 50 k	0.12 + 0.05
		50 k to 100 k	0.60 + 0.08
		100 k to 300 k	4.00 + 0.50

750 V AC range is limited to 100 kHz.

AC Current

Range	Resolution	Frequency (Hz)	Accuracy
1.000000 A	1 μA	3 to 5	1.00 + 0.04
		5 to 10	0.30 + 0.04
		10 to 5k	0.10 + 0.04
3.000000 A	10 μA	3 to 5	1.10 + 0.06
		5 to 10	0.35 + 0.06
		10 to 5 k	0.15 + 0.06

Frequency and Period

Range	Frequency (Hz)	Accuracy (% of reading)
100 mV to 750 V	3 to 5	0.1
	5 to 10	0.05
	10 to 40	0.03
	40 to 300 k	0.01

General Specifications

Standard Interfaces	RS-232 and USB (GPIB optional).
Line Power	100 to 230 V AC 50/60 Hz.
Dimensions	W 210 x H 85 x D 350 mm.
Weight	4.4 kg.

9796..... Premium test lead set
 ECFL.....EasyCal Calibration Software
 (for additional options see separate datasheet)
 C173.....Traceable calibration certificate (Factory)
 C117.....Accredited calibration certificate (ISO 17025)

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.