



Description

The 5065B is a high performance, versatile 6½ digit multimeter module with 19 measurement functions. Low cost, simple operation, stability, and high accuracy make the 5065B 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 5065B suitable for test engineers, R&D, service, and calibration technicians. 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 module features a USB interface enables connectivity to a PC or CalBench control centre. When the 5065B is fitted into a console that features a control centre (CC12, 8060 modules for example), the internal connectivity is configured in the factory prior to delivery. This enable users to work with EasyCal software to control and read back from the multimeter. Optional multi channel signal scanning is possible via the 7085A temperature distribution and scanner module. This is commonly used for multi signal measurements for thermocouples. Further options include test lead sets, GPIB interface, and an RTD probe adaptor.

Applications

The 5065B 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 5065B 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 module option (7085A)
- EasyCal software compatible

EasyCal Calibration Software

The 5065B 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

5065B Digital Multimeter Module
 9714 10 channel scanner card
 7085A Temperature distribution and scanner module
 9715 GPIB interface (replaces standard fitted RS-232 interface)
 9717 RTD probe adaptor
 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, USB (GPIB optional). Comms will be inside console to control centre module if ordered.
Line Power	As per CalBench ordered.
Dimensions	W295 x H201mm (primary console fitting only).

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