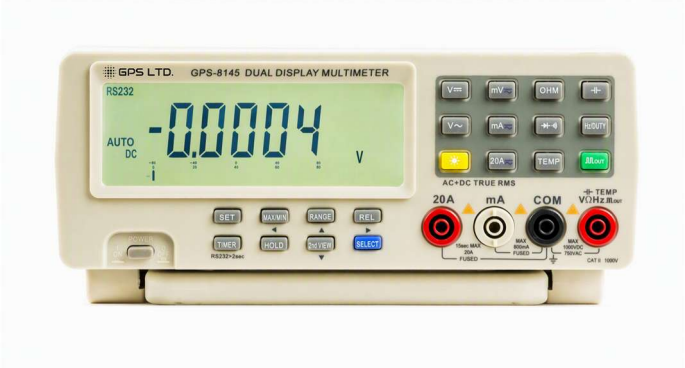
GPS-8145

Benchtop Multimeter



Two Readings At Once, From One Probe.

A bench multimeter with two 80 000 count displays and a 23-segment bar graph across the bottom. Fifty measuring functions, true RMS on both AC paths, and an AC+DC mode that reads the two together rather than making you choose.

The second display is the point of the instrument. It pairs with the first: AC volts alongside frequency, DC alongside dBm, dBm alongside frequency, frequency alongside duty cycle, Celsius alongside Fahrenheit. One probe placement, two answers, which on a fault-finding bench saves more time than any amount of resolution.

Frequency runs to 8 MHz on the terminals. Above that a high frequency mode reaches 1000 MHz, using both displays together as a ten digit counter; from 10 MHz upward that needs the adapter, which is ordered separately. A rotation speed function reads to 99 999 RPM with its accessory.

For anything that has to be watched rather than glanced at, a 36-hour dynamic record holds maximum, minimum, average and the difference between them, upper and lower limits put over, under or in-range on the second display, and the optically isolated RS-232 logs up to 8192 records at intervals from a tenth of a second to ninety-nine.

KEY FEATURES

- Dual 80 000 count display · 23-segment bar
- True RMS, with AC+DC measurement
- Frequency to 1000 MHz with the adapter
- Square wave output, 1 to 99% duty
- 36-hour maximum, minimum and average record
- Optically isolated RS-232 with software

IDEAL FOR

- Education and training laboratories
- Service, repair and fault finding
- Production and goods-in testing
- Research and development benches
- Frequency and signal work

MEASUREMENT RANGES

Range	Accuracy	Resolution	Notes
Measurement ranges · dual 80 000 count display · true RMS			
DC voltage 80 mV to 1000 V	±(0.05% + 5) on 8 V and 80 V	1 µV	Six ranges · over 1000 MΩ below 800 mV, 10 MΩ above
AC voltage 80 mV to 750 V	±(0.8% + 50), 50 Hz to 20 kHz	1 µV	Five ranges · true RMS
DC current 80 mA to 20 A	±(0.2% + 10) on the mA ranges	1 µA	Four ranges · 20 A for fifteen seconds at a time
AC current 80 mA to 20 A	±(0.2% + 10), 50 Hz to 5 kHz	1 µA	True RMS · 50 Hz to 200 Hz on the amp ranges
Resistance 800 Ω to 80 MΩ	±(0.3% + 5)	0.01 Ω	Six ranges · separate Hi range reaching 8000 MΩ
Capacitance 1 nF to 100 µF	±(2.5% + 50)	1 pF	Six ranges · ±(5.0% + 50) on the 1 nF range
Frequency 0.5 Hz to 8 MHz	±(0.5% + 5)	0.01 Hz	Six ranges · sensitivity 0.7 V rms
Frequency 8 MHz to 1000 MHz	±(0.1% + 5)	1 kHz	High frequency mode · adapter needed above 10 MHz
Temperature −50 to 1300 °C	±(1.5% + 10)	0.1 °C	K type thermocouple · −58 to 2372 °F
dBm −80 to +80 dBm	±1.0%	0.01 dBm	Twenty reference impedances, 4 Ω to 1200 Ω
Diode, to 3.0000 V	±(3.0% + 5)	0.1 mV	Continuity beeper below 50 Ω
Rotation speed, to 99 999 RPM	±(0.05% + 5)	—	With the RPM accessory
Square wave output	—	—	Sixteen frequencies, 0.5 Hz to 5 kHz · duty 1 to 99% · about 3 V

Accuracy is specified for one year after calibration, at 18 °C to 28 °C and 0% to 75% relative humidity, and takes the form ±(a% of reading + counts). The millivolt ranges of DC voltage carry a much wider figure than the volt ranges, so the basic accuracy above belongs to the 8 V and 80 V ranges rather than to the whole function. In a radio frequency field of 1 V/m, add 5% of range to every function except capacitance, which is not specified in a field at all.

WHAT'S IN THE BOX

- GPS-8145 meter
- Test lead set
- K type thermocouple
- RS-232 cable and logging software
- Operation manual

AVAILABLE SEPARATELY · The high frequency adapter, which is needed for frequency measurement above 10 MHz, and the RPM accessory for rotation speed. Neither is supplied with the instrument.

GENERAL SPECIFICATIONS

Code	Item	Part Number
GPS-8145	Benchtop multimeter, dual 80 000 count display, true RMS, with square wave output	**421060**

DISPLAY
Dual 80 000 count LCD, primary and secondary, updating four times a second · 23-segment bar graph updating forty times a second · backlight

RANGING
Automatic or manual on every function

LIMITS AND RELATIVE
Upper and lower limits set on the instrument, with over, under and in-range shown on the second display · difference or percentage against a measured or entered reference

TERMINALS
COM · V/Ω/Hz · mA · 20 A · maximum 1000 V rms between any terminal and ground

COMPLIANCE
IEC 61010 · CAT II 1000 V and CAT III 600 V

ENVIRONMENT AND SIZE
Operating 0 °C to 50 °C below 2000 m · humidity 75% or less to 40 °C and 45% or less above it · storage −20 °C to 60 °C · 260 × 220 × 82 mm · about 1.4 kg

SIMULTANEOUS PAIRS
AC with DC · AC with frequency · DC with dBm · dBm with frequency · frequency with duty cycle · Celsius with Fahrenheit

RECORDING
Thirty-six hour dynamic record of maximum, minimum, average and maximum minus minimum · auto hold, and positive or negative peak hold · elapsed timer to 9:59:59 with a beeper at a set time

INTERFACE
Optically isolated RS-232 · supplied software logs up to 8192 records at intervals from 0.1 to 99 seconds, with alarm limits and a scheduled start

PROTECTION
Power fuse 200 mA · current fuses 800 mA and 13 A · 250 V rms overload protection on resistance, capacitance, frequency, temperature and diode

POWER
110 V or 220 V AC on a rear selector · 50/60 Hz · automatic power off after thirty minutes, disabled under RS-232 control

WARRANTY
1 year, subject to product registration with GPS LTD · service and calibration available