GPS LTD.

GPS-8055C

Benchtop Multimeter

KEY FEATURES

- 240 000 count dual display, 4.3 inch colour
- True RMS AC voltage and AC current
- Two-wire and four-wire resistance
- 10 MΩ or 10 GΩ DC input impedance
- Trend chart, histogram and bar views
- USB, LAN and SCPI control

Five And A Half Digits, On The Network.

A 5½-digit bench multimeter with a 240 000 count dual display, true RMS on both AC paths, two-wire and four-wire resistance, and a 4.3 inch colour screen that will show a reading as a number, a bar, a trend or a histogram. Basic DC voltage accuracy is ±(0.015% + 0.003) over a year.

Resolution and speed are a deliberate trade. At the slow rate the instrument reads five times a second at the full 5½ digits, and every accuracy figure in this datasheet is specified there. The two faster rates run at 4½ digits, up to 150 readings a second, for production work where throughput matters more than the last digit.

On the 200 mV and 2 V ranges the DC input impedance can be lifted from 10 MΩ to above 10 GΩ, so a high impedance source is measured rather than loaded. Four-wire resistance takes the lead resistance out of the reading, which is what makes low value measurement worth doing at this resolution.

Everything is reachable from a test rig. USB device, USB host and 10/100 LAN are standard, the command set is SCPI and compatible with mainstream multimeters, and readings are written to internal flash or a USB drive as XML or CSV. An external trigger input and a voltmeter complete output let it sit inside a sequenced measurement.

IDEAL FOR

- Research and development benches
- Calibration and reference measurement
- Production and goods-in testing
- Automated and sequenced test rigs
- Education and training laboratories

MEASUREMENT RANGES

Range	Accuracy	Resolution	Notes
Measurement ranges · 240 000 count dual display · true RMS AC · 5½ digits at five readings per second			
DC voltage 200 mV to 1000 V	±(0.015% + 0.003) on 2 V, 200 V and 1000 V	1 µV	Five ranges · input 10 MΩ, or above 10 GΩ on 200 mV and 2 V
AC voltage 200 mV to 750 V	±(0.2% + 0.05), 45 Hz to 20 kHz	1 µV	Five ranges · true RMS · 20 Hz to 100 kHz · 1 MΩ with 100 pF
DC current 200 µA to 10 A	±(0.055% + 0.005) on 200 µA and 2 mA	1 nA	Six ranges · above 7 A, thirty seconds on and thirty off
AC current 20 mA to 10 A	±(0.50% + 0.10), 45 Hz to 2 kHz	100 nA	Four specified ranges · true RMS · 20 Hz to 10 kHz
Resistance 200 Ω to 100 MΩ	±(0.020% + 0.003) on 2 kΩ and 20 kΩ	1 mΩ	Seven ranges · two-wire or four-wire · under 8 V open circuit
Capacitance 2 nF to 10 000 µF	±(1% + 0.5), 20 nF to 200 µF	—	Six ranges · ±(3% + 1.0) on the 2 nF range
Frequency 20 Hz to 1 MHz	±(0.01% + 0.003) below 200 kHz	—	Measured on the 200 mV to 750 V AC ranges
Period 1 µs to 0.05 s	±(0.01% + 0.003) below 200 kHz	—	Same input ranges as frequency
Temperature, RTD −200 to 660 °C	0.16 °C	—	Platinum, α = 0.00385 · four-wire, or two-wire with REL
Temperature, thermocouple −270 to 1820 °C	0.5 °C on types E, J, K, N, R and T	—	Eight types · built-in cold junction, ±2 °C
Continuity, fixed 2 kΩ	±(0.05% + 0.01)	—	1 mA test current · threshold adjustable 0 to 2000 Ω
Diode, to 2 V	±(0.05% + 0.01)	—	1 mA test current · beeper from 0.1 V to 2.0 V

Accuracy is specified for one year after calibration, at 23 °C ± 5 °C, after thirty minutes of warm-up and at the slow reading rate, in the form ±(% of reading + % of range); each figure is the best across that function's ranges. All ranges give 20% over-range except 1000 V DC, 750 V AC and the 10 A ranges. Resolution is quoted at 5½ digits.

WHAT'S IN THE BOX

- GPS-8055C meter
- Test lead set with alligator clips
- USB cable and AC power cord
- Spare current fuse
- Quick start guide
- EasyDMM software

AVAILABLE SEPARATELY · A USB to GPIB adapter, for benches already on a GPIB bus. Test leads, fuses and calibration are available from GPS.

GENERAL SPECIFICATIONS

Code	Item	Part Number
GPS-8055C	Benchtop multimeter, 5½ digit, 240 000 count dual display, true RMS, two-wire and four-wire resistance	**420055**

DISPLAY
4.3 inch colour TFT, 480 × 272 · dual display, main and secondary · number, bar meter, trend chart and histogram views

RANGING
Automatic or manual on every function · 20% over-range except 1000 V DC, 750 V AC and the 10 A ranges

MEMORY
10 000 readings held while powered · 1 Gb flash for settings and data, written as XML or CSV · USB drive supported

TRIGGER
Automatic, single and external · 1 to 10 000 samples a trigger · delay 6 ms to 10 000 ms · voltmeter complete output on the rear

COMPLIANCE
IEC 61010-1 · CAT I 1000 V and CAT II 300 V · EN 61326-1 Class A · pollution degree 2

ENVIRONMENT AND SIZE
Operating 0 °C to 50 °C · up to 3000 m · 282 × 260 × 105 mm · 3.33 kg

READING RATE
Three rates · five readings a second at 5½ digits · the two faster rates run at 4½ digits, to 150 readings a second · accuracy is specified at the slow rate

MATH
Maximum, minimum, average, span and standard deviation · dBm and dB, reference 50 Ω to 8000 Ω · relative · pass and fail limits

INTERFACE
USB device, USB host and 10/100 LAN · SCPI, compatible with mainstream multimeter command sets · USB to GPIB adapter optional

TERMINALS AND PROTECTION
HI, LO, HI sense, LO sense and I · LO floats to 500 Vpk · 1000 V on the voltage and resistance ranges · rear 10 A fast fuse, 12 A slow inside

POWER
110 V or 220 V AC on a rear selector · 50/60 Hz · 20 VA maximum

WARRANTY
1 year, subject to product registration with GPS