GPS LTD.

# GPS-8815G/F

## Precision DC Resistance Meters


### KEY FEATURES

- 0.01 µΩ resolution · 500 000 counts
- ±0.01% + 3 digits
- Pulsed, bi-directional current to 10 A
- Temperature compensation, 0 to 80 °C
- Comparator with upper and lower limits
- 5 in touch screen · RS232, RS485, LAN, USB

## Ten Amps That Never Heat The Joint.

A bench four-terminal DC resistance meter that resolves to 0.01 µΩ on a 500 000 count display, at ±0.01% + 3 digits. Two models, identical but for how far up the range reaches: 500 Ω on the GPS-8815G, 20 MΩ on the GPS-8815F.

The test current reaches 10 A, which is what gets a usable signal out of a busbar joint or a weld. It is not a steady current. The instrument sends it as a pulse and alternates the direction, and both of those are there for a reason. Reversing cancels the thermal EMF that any junction of dissimilar metals generates, which on a milliohm measurement can be larger than the signal. Pulsing keeps the joint from warming up and drifting while you measure it.

Resistance also moves with temperature, so a winding measured warm reads differently from the same winding cold. The supplied probe sits near the part and the meter corrects the reading to a reference temperature you choose, over 0 to 80 °C to an accuracy of 0.2 °C. A reading taken on a hot motor then compares with the figure on the drawing.

For a line, the comparator holds an upper and a lower limit and reports the verdict alongside the reading, the deviation and the percentage. Ten readings a second, internal, manual or external trigger, and RS232, RS485, LAN and USB for the host, with a USB socket on the front for screens and logged data.

### IDEAL FOR

- Relay, switch and connector contacts
- Motor, transformer and coil windings
- Shunts, busbars and bonded joints
- Cable and conductor resistance
- Incoming inspection and production QA

## MEASUREMENT RANGES

| Range | Accuracy | Resolution | Notes |
|---|---|---|---|
| **Measurement range · four-terminal · 500 000 count display** | | | |
| **GPS-8815G · 0.01 µΩ to 500.000 Ω** | ±0.01% + 3 digits | 0.01 µΩ | Six ranges, manual or automatic |
| **GPS-8815F · 0.01 µΩ to 20.000 MΩ** | ±0.01% + 3 digits | 0.01 µΩ | Six ranges, manual or automatic |
| **Test conditions** | | | |
| **Test current, maximum 10 A** | — | — | Pulsed · positive and negative |
| **Measurement rate 10 or 1 per second** | — | — | Selected on the instrument |
| **Temperature compensation 0 to 80 °C** | ±0.2 °C | — | Probe supplied · corrects to a chosen reference |
| **Zero** | — | — | Open circuit and short circuit reset |

*±0.01% + 3 digits is the best case figure and is bought with measurement time: the faster rate trades accuracy for throughput. Run the open and short circuit reset before measuring, and again whenever the leads or the fixture change, because at 0.01 µΩ resolution the leads are a significant part of what is being read. The bi-directional current cancels thermal EMF at the contacts, which on a low value part can otherwise be larger than the resistance being measured.*


### WHAT'S IN THE BOX

- GPS-8815G or GPS-8815F meter
- Four-terminal Kelvin clip test cable
- Temperature probe
- RS232 communication cable
- Instruction manual and warranty certificate

**AVAILABLE SEPARATELY** · A four-terminal clamp fixture, for holding cable, strip and busbar samples squarely against the contacts so the same sample reads the same way twice.

## GENERAL SPECIFICATIONS

| Code | Item | Part Number |
|---|---|---|
| **GPS-8815G** | Precision DC resistance meter, 0.01 µΩ to 500.000 Ω · 0.01% + 3 digits | **618815** |
| **GPS-8815F** | Precision DC resistance meter, 0.01 µΩ to 20.000 MΩ · 0.01% + 3 digits | **628815** |

**MEASURES**
DC resistance, four-terminal · two models, separated only by the top of the range

**RESOLUTION**
0.01 µΩ

**SIGNAL SOURCE**
Maximum current under 10 A · pulsed, positive and negative current

**TEMPERATURE COMPENSATION**
Range 0 to 80 °C · accuracy 0.2 °C · probe supplied

**RESULT DISPLAY**
Reading · deviation as an absolute value or as a percentage · sorting result

**TRIGGER**
Internal, manual or external

**DISPLAY**
5 in colour touch screen with a keypad · English interface · keypad lock and data hold

**ENVIRONMENT**
Operating −10 °C to 50 °C, humidity below 85% · storage −15 °C to 55 °C, humidity below 90%

**BASIC ACCURACY**
±0.01% + 3 digits · 500 000 count display

**RANGING**
Six ranges, manual or automatic

**MEASUREMENT RATE**
10 or 1 readings per second

**CALIBRATION**
Open circuit and short circuit reset

**SORTING**
Comparator with an upper and a lower limit, or switched off

**INTERFACES**
RS232, RS485, LAN and USB · USB flash drive port on the front for screen captures and logged data

**POWER AND SIZE**
90 to 250 V AC, 50/60 Hz · maximum 15 VA · 264 × 107 × 300 mm, width by height by depth · 2.5 kg

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