



GPS-278

Digital Clamp Meter



KEY FEATURES

- 2000 A AC and DC · 55 mm jaw
- 2000 V AC and DC on the leads
- True RMS AC voltage
- Inrush current, RMS over 80 ms
- Resistance, capacitance, diode, continuity
- No rotary switch · 1999 count display
- CAT II 1000 V · IEC 61010-1 · CE

IDEAL FOR

- Switchgear and busbar current
- Large motor and compressor starting
- Traction and heavy DC installations
- High voltage distribution work
- Plant and substation maintenance

Two Thousand Amps, And Two Thousand Volts.

A handheld clamp meter built around two large numbers: 2000 A through a 55 mm jaw, and 2000 V on the test leads, AC and DC on each. There is no rotary switch; functions step round on the power key, which keeps the case narrow for a jaw this size.

Those two figures are the reason to choose it. On switchgear, busbar, traction or large motor circuits the ranges on a general purpose clamp run out and this one does not. For anything smaller, the GPS-276 is the better instrument on almost every other count, and this datasheet would rather say so than have you find out later.

AC voltage is measured true RMS. AC current is average responding and calibrated to a sine, so it reads correctly on a clean mains waveform and low on a chopped or heavily distorted one, worth knowing before putting it on a drive output. The inrush function captures the RMS of an 80 millisecond window rather than a peak, the shape a large motor start actually has; it works in manual range only, so select 2000 A first if you do not know the magnitude.

MEASUREMENT RANGES

Range	Accuracy	Resolution	Notes
Measurement ranges · 1999 count display			
DC voltage 2 V to 2000 V	$\pm(0.5\% + 5)$	1 mV	Four ranges · about 10 M Ω · $\pm(2\% + 5)$ on 2000 V
AC voltage 2 V to 2000 V	$\pm(0.8\% + 5)$	1 mV	True RMS · 40 Hz to 1 kHz · 40 to 100 Hz on the 2000 V range
DC current 20, 200 and 2000 A	$\pm(1.9\% + 10)$	10 mA	Through the jaw · zero key before measuring
AC current 20, 200 and 2000 A	$\pm(1.9\% + 10)$	10 mA	Average responding, sine calibrated · 50 to 60 Hz · nothing shown below 0.3 A
Inrush current	—	—	RMS of an 80 ms window · manual range only
Resistance 200 Ω to 20 M Ω	$\pm(0.8\% + 5)$	0.1 Ω	Six ranges · $\pm(1\% + 5)$ on 200 Ω , $\pm(1.5\% + 5)$ on 20 M Ω
Capacitance 20 nF to 2000 μ F	$\pm(3\% + 10)$	10 pF	Six ranges · $\pm(5\% + 10)$ on 2000 μ F · no manual range
Diode, forward voltage	—	—	0.5 mA forward · about 3.2 V reverse · also reads LED working voltage
Continuity	—	—	Buzzer below about 60 Ω · open circuit about 0.6 V

Accuracy is specified for one year after calibration, at 23 °C $\pm$ 5 °C and 70% relative humidity or less, in the form $\pm(a\%$ of reading + digits). Note the difference between the two AC paths: voltage is true RMS, current is average responding and calibrated to a sine, so a distorted current waveform will read low. Overload protection is 2000 V DC or AC peak on the voltage ranges and 220 V rms on resistance, capacitance, diode and continuity. Above 1000 A, do not measure continuously for more than five minutes. Clamping more than one conductor gives a meaningless reading.



WHAT'S IN THE BOX

- GPS-278 clamp meter
- Test lead set
- 9 V battery
- Carrying case
- Operation manual

BEFORE MEASURING · Zero the DC current range before clamping: the reading drifts with the earth's field and whatever it shows unzeroed is added to the measurement. Hold the instrument in the orientation you intend to measure in, then press zero. Test leads must be out of the instrument before any current measurement, and out of the circuit before changing function.

GENERAL SPECIFICATIONS

Code	Item	Part Number
GPS-278	Digital clamp meter, 2000 A AC/DC and 2000 V AC/DC, 1999 count, with inrush current	622278

DISPLAY

1999 count LCD · automatic polarity · overload shown as OL · low battery indication · backlight and clamp head light

RANGING

Automatic, with a manual override on voltage, current and resistance · capacitance is automatic only

INRUSH

RMS of an 80 ms window · manual range only · select 2000 A first if the magnitude is unknown

AC RESPONSE

Voltage true RMS, sine calibrated · current average responding, sine calibrated

POWER

One 9 V battery, IEC 6F22, NEDA 1604, JIS 006P or equivalent

SIZE AND WEIGHT

270 × 100 × 46 mm · about 460 g with the battery fitted

COMPLIANCE

IEC 61010-1 · CAT II 1000 V · CE (EMC and LVD)

CONTROLS

No rotary switch · functions step round on the power key · separate select, range and hold keys · reset key for recovery after a shock

JAW

Opens to 55 mm · single conductor, centred in the jaw

HOLD AND POWER OFF

Data hold · automatic sleep after ten minutes, woken on the power key

OVERLOAD PROTECTION

2000 V DC or AC peak on the voltage ranges · 220 V rms on resistance, capacitance, diode and continuity

ENVIRONMENT

Operating 0 °C to 40 °C below 75% relative humidity · storage -10 °C to 60 °C below 80% relative humidity

WARRANTY

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