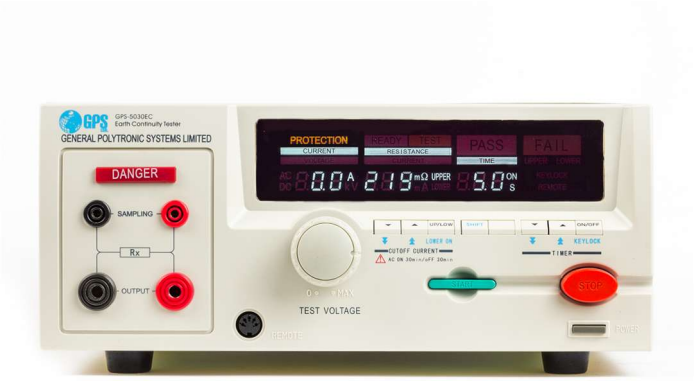
GPS LTD.

GPS-5030EC

Earth Continuity Tester



KEY FEATURES

- 3.0 to 30.0 A constant test current
- 0.0 to 600 mΩ · 0.1 mΩ resolution
- Four-terminal Kelvin measurement
- Upper and lower limit pass window
- RS232 and PLC remote control port
- Instant alarm on an open circuit

Thirty Amps Through the Earth Path.

A bench instrument for proving the protective earth path of a finished product. It forces a real fault-level current through the bond and measures the volt drop, because a continuity check at a few milliamps will pass a joint that cannot carry fault current.

Current is set anywhere from 3 to 30 A and held constant as the resistance varies. Measurement is four-terminal, so the test leads and their contacts are outside the reading rather than added to it, which is what makes 0.1 mΩ resolution mean anything at this level.

Upper and lower limits give a pass window rather than a single threshold, so an open circuit and a short across the fixture both fail. A PLC remote port and an RS232 interface let the instrument sit in a production line and be told when to start.

IDEAL FOR

- Production line safety testing
- Household appliances and enclosures
- Electronic instruments and equipment
- Cable and lead assembly checks
- Type test and pre-compliance work

MEASUREMENT RANGES

Range	Accuracy	Resolution	Method
Ground resistance · four-terminal Kelvin measurement			
0.0 to 600 mΩ	±(2% rdg + 0.3 mΩ)	0.1 mΩ	Measured value
0.0 to 600 mΩ	±(2% set + 0.3 mΩ)	0.1 mΩ	Upper and lower limits
Test current · sine wave, crest factor 1.3 to 1.5, 50 or 60 Hz			
3.0 to 30.0 A	±(2% rdg + 0.2 A)	0.1 A	Measured value, true RMS
3.0 to 30.0 A	±(2% set + 0.2 A)	0.1 A	Setting
Maximum resistance at each test current			
200 mΩ	—	—	At 30.0 A
270 mΩ	—	—	At 25.0 A
390 mΩ	—	—	At 20.0 A
600 mΩ	—	—	At 10.0 A
Test time			
0.5 to 999.9 s	±(0.2% set + 0.05 s)	0.1 s	Setting, 0 = continuous
0.5 to 999.9 s	±(0.1% set + 0.05 s)	0.1 s	Measured value

The resistance the instrument can reach depends on the current selected. The output has to develop the volt drop across the bond, so 600 mΩ is available at 10 A and 200 mΩ at 30 A. Choose the current the standard calls for first, then check the expected resistance falls inside the figure above it. Distortion is below 2% on no load or a pure resistive load.

CONTROL AND INTERFACING

- RS232 interface and PLC remote control port
- Pass and fail judgement against upper and lower limits
- Instant alarm if the earth path is open circuit
- Adjustable resistance offset to null the fixture
- Selectable 50 Hz or 60 Hz output
- Audible and visual alarm, automatic test time control

PASS WINDOW · Both limits are set across the full 0 to 600 mΩ span, so a reading above the upper limit and a reading below the lower limit both return a fail. A lower limit catches a shorted fixture or a probe that has not made contact.

GENERAL SPECIFICATIONS

Code	Item	Part Number
GPS-5030EC	Bench earth bond tester, 3 to 30 A, four-terminal Kelvin	**861030**

MEASURES
Earth bond resistance by four-terminal Kelvin measurement, with the test current and elapsed time displayed alongside

OUTPUT
Sine wave, crest factor between 1.3 and 1.5 · distortion below 2% on no load or a pure resistive load · 50 Hz or 60 Hz, selectable

TIMING
0.5 to 999.9 s in 0.1 s steps, or continuous · automatic test time control

INTERFACES
RS232 · PLC remote control port for starting and stopping the test from a line controller

ENVIRONMENT
Operating 0 to 40 °C · relative humidity 75% or below

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

TEST CURRENT
3.0 to 30.0 A, constant current, held as the resistance of the item under test varies

JUDGEMENT
Upper and lower limits across 0.0 to 600 mΩ · pass and fail signalled audibly and visually · instant alarm on an open circuit

OFFSET
Adjustable resistance offset, to take the fixture and leads out of the reading before testing begins

POWER
220 V AC ±10%, single phase, 47 to 63 Hz · fuse 5 A / 250 V AC

DIMENSIONS · WEIGHT
380 × 320 × 130 mm (l × w × h) · 10 kg