



G4500 **BLACKBOX** Portable

# Technical Specifications

## Features & Benefits



- **No Thresholds / No Missed Events:** Continuous 1+ Year Cycle Onboard Logging of All Measurements
- **Capture Everything:** Cycle by cycle RMS Values, Frequency, Harmonics, and Trends
- **Sampling Rate:** Voltage up to 1024 Samples per Cycle; Current up to 256 Samples per Cycle
- **Quickly Retrieve Data:** Built-In Web Server for Remote Monitoring Using Standard Web Browser
- **Rechargeable Power Supply:** Built-in Battery With up to 2 Hours of Stand-by Power
- **Remote Connectivity and Diagnostics:** Wireless 802.11g Access Point
- **Plug & Play:** Automatic Setup with Self-Identifying Probes
- **Standard Compliance Testing to EN50160, IEC 6100-4-15**
- **Software Included:** PQSCADA and Investigator Analysis Software With Automatic EN50160 and Customized Report Generation
- **Integrated I/O & Compression**

# Technical Specifications:

Product Specifications	
Input Channels	11 Measurement Channels: 4 AC Voltage 4 AC Current 1 DC Voltage 1 DC Current 1 Temperature
Power Supply	85-265VAC / 2A, 120-370VDC 35-55VDC Up to 2 Hours Battery Backup Up to 25 Second Ride-through Super Capacitor
Rated Voltage (Direct Voltage Readings) AC/DC	1KV RMS AC / Up to 1KV DC
Dimensions (H x W x D) Unit Alone / with Packaging	250x 60x 300mm / 425x240x400mm
Weight Gross / Net	6.25Kg. / 3.7 Kg.
Current Clamps	Auto Detected
AC Voltage Clamps Fuse Rating	500mA / 1000V / 50kA
RoHS Compatibility	Full
Environmental Specifications	
Intended Use	Indoor
Operating Temperature Range	Working Temperature: 0 to 50° C Storage Temperature: (-20) to 60° C
Maximum Relative Humidity	85%
Altitude	Up to 2000 Meters
Pollution Degree	2
Installation Categories	II
Real-Time Measurements	
Sampling Rate (All Channels Simultaneously or Concurrently)	Voltage: 1024 samples per cycle Current: 256 samples per cycle
Harmonics (Individual, Even, Odd, Total)	Voltage Up to 511th Harmonic Current up to H127
Inter-Harmonics	According to the Standard EN61000-4-30
Type of Analog to Digital Converter	16 / 19* bit
Data and Waveform Logs	
Time Stamp Resolution	LAN Ethernet (Good Link) or GPS+PPS:50ns
Internal Memory	8 GB
Power Quality Analysis	
Transient Detection	19.5/16u sec.
Communications and I/O	
Ethernet Ports	3 x 10/100Mb Fast Ethernet Ports, Integrated Router
Power Over Ethernet (PoE)	Available as Output, 13Watt
Wi-Fi Interface	802.11 b/g with Antenna
Serial Interface	1 x RS-232, 1 x RS-485
Digital I/O	6 x 5-24VDC Digital Inputs
Extension Slot	PCMCIA
Display	Mobile Analysis Lab with Full Capabilities of Tablet PC
Communication	Internet, Intranet, GPRS, 3G, Dialup Modem
Time Synchronization	SNTP, IRIG-B, GPS, Self

Specifications are subject to change without notification. For current standards compliance, contact Elspec technical support.

\*Note: 19 bit – The hardware contains a dual High & Low AFE circuits, each using 16bit A2D. The difference between is x10 GAIN. This dual circuitry is combined per each measurement input and, therefore, creates more than 19bit effective A2D range.

## Main Features:

<b>Real-time Measurements</b>	
Voltage/Current: Per Phase, Average, Unbalance	X
Power: Real, Reactive, Apparent, Power Factor, Frequency	X
Energy: Bi-directional, Total, Import, Export, Net	X
Demand: Block, Rolling Block, Thermal, Predicted	X
Sampling Rate, Maximum Samples/Cycle	1024
Harmonics (Individual, Even, Odd, Total) Up to	51th
Measurement According to IEC 61000-4-30	X
Cycle-by-cycle RMS, Frequency and Harmonics	X
Measurement During Overloading (from Nominal)	x10
Type of Analog to Digital Converter	16 / 190* bit
Battery Backup	2 Hours
<b>Data and Waveforms Logs</b>	
Cycle-by-cycle PQZIP Logging	X
Event Logs	X
Waveform Logs	X
Min/max Logs for Any Parameter	X
Timestamps, Resolution in Micro Seconds	X
Time SYNC accuracy via LAN (Fast Ethernet Link) or via GPS + PPS	50
Internal Memory	8192 MB
Firmware Limit for Contiguous Data and Waveform Capture	Unlimited
<b>Power Quality Analysis</b>	
Sag/Swell Monitoring	X
Symmetrical Components: Zero, Negative, Positive	X
Transient Detection, Microseconds	19.5/16µSec
Flicker (IEC 61000-4-15)	X
Fast Flickering	X
Compliance Testing to EN50160	X
EN50160 Timestamps	X
Configurable for IEEE 519-1992, IEEE 1159, SEMI	X
Timestamps of Above	X
Inter Harmonics	X
<b>Communication Ports and I/O</b>	
Ethernet Ports	3
Power Over Ethernet (PoE)	only out
RS-232 port RS-485/422 Port	X
Compact Flash (CF) Expansion	(PCMCIA)
Onboard Comprehensive WEB Server	X
Onboard OPC (Open Connectivity) Server	X
OPC Gateway: Other RS-485/422 Accessible via OPC	X
Wi-Fi Communication (802.11g)	X

## Standards and Compliances:

Configurable Compliance Support
Cycle by Cycle
EN50160
EN50160 Time Stamping
IEC 61000-4-30
IEC 6100-4-15
IEC 61000-4-7
IEC 687/62053-22 0.2S Compliant
IEC 687/62053-22 0.5S Compliant
ANSI C12.20 0.2 Compliant, Class 10 & 20
NVE-PQ
CREG

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