User Manual
ENGLISH

PA32ER

POWER ADAPTER

Measure Up
WITH AEMC® INSTRUMENTS

TABLE OF CONTENTS

1. INTRODUCTION

Thank you for purchasing this PA32ER power supply and battery charger. This accessory is designed to be used with the PowerPad® IV Model 8345, the Oscilloscope 9000 Series and the C.A 6117.

For the best results from your instrument and for your safety, you must read the enclosed operating instructions carefully and comply with the precautions for use. These products must be used only by trained and qualified users.

	Signifies that the instrument is protected by double or reinforced insulation
	**CAUTION - Risk of Danger!** Indicates a **WARNING**. Whenever this symbol is present, the operator must refer to the user manual before operation
	Suitable for indoor use
 	Chauvin Arnoux® has adopted an Eco-Design approach in order to design this appliance. Analysis of the complete lifecycle optimized the effects of the product on the environment. In particular this appliance exceeds regulation requirements with respect to recycling and reuse
	Important instructions to read and understand completely
	Important information to acknowledge
	USB socket
	This product complies with the Low Voltage & Electromagnetic Compatibility European directives (73/23/CEE & 89/336/CEE)
	The UKCA marking certifies that the product complies with the requirements that apply in the United Kingdom, specifically regarding Low-Voltage Safety, Electromagnetic Compatibility, and the Restriction of Hazardous Substances
	In the European Union, this product is subject to a separate collection system for recycling electrical and electronic components in accordance with directive WEEE 2002/96/EC

Definition of Measurement Categories (CAT)

CAT IV corresponds to measurements performed at the primary electrical supply (<1000 V).

Example: primary overcurrent protection devices, ripple control units, and meters.

CAT III corresponds to measurements performed in the building installation at the distribution level.

Example: hardwired equipment in fixed installation and circuit breakers.

CAT II corresponds to measurements performed on circuits directly connected to the electrical distribution system.

Example: measurements on household appliances and portable tools.

1.1 PRECAUTIONS FOR USE

For personal safety and for the safety of the environment of use, you must read and comply with the precautions for use. If you do not comply with these safety instructions, there is a risk of electric shock, explosion, or fire. If you use the instrument in an unspecified manner or do not observe elementary safety rules, the protection that they provide could be compromised and endanger you.

This instrument complies with safety standard IEC/EN 61010-1 and the leads are compliant with IEC/EN 61010-031, for voltages up to 1,000 V in overvoltage category IV. The protection provided by the instrument may be impaired if it is used other than as specified by the manufacturer.

- Comply with the rated maximum voltage and current and the overvoltage category.
- Never exceed the protection limits stated in the specifications (§ 4.2).
- Observe the environmental conditions of use (§ 4.3).
- Use only the leads and accessories supplied. The use of leads (or accessories) of a lower voltage or category limits the voltage or category of the combined instrument and leads (or accessories) to that of the leads (or accessories).
- Before each use, check the condition of the insulation for the cables, case, and accessories—anything that appears damaged (even partially) must be reported for repair or scrapping.
- Do not expose the housing to a source of heat or to direct sunlight. Let air flow freely around it to ensure sufficient cooling.
- When handling the alligator clips, keep your fingers behind the physical guard.
- ⚠ Use protective equipment when required.
- Do not modify the instrument and use only original replacement parts. Repairs or adjustments must be performed by authorized personnel.
- If hazardous voltages are present at the location of measurement, use suitable personal protective equipment.

1.2 RECEIVING YOUR SHIPMENT

Upon receiving your shipment, make sure that the contents are consistent with the packing list. Notify your distributor of any missing items. If the equipment appears to be damaged, file a claim immediately with the carrier and notify your distributor at once, giving a detailed description of any damage. Save the damaged packing container to substantiate your claim.

1.3 ORDERING INFORMATION

Adapter - 1000 V PA32ER Power Supply for Model 8345 ..... Cat. #5100.15
Includes Power Supply, (2) 1000 V CAT IV safety leads, two 600 V CAT IV 10 ft black leads, (2) 1000 V CAT IV black alligator clips, (1) power plug adapter with banana jacks, (1) 115 V power cord, and user manual.

1.3.1 Accessories and Replacement Parts

Adapter – 110 V Outlet Adapter w/4 mm Banana Plugs ..... **Cat. #2118.49**

Lead – One 10 ft (3 m) Black Lead w/Black Alligator Clip
{Lead rated 1000 V CAT IV 10 A, Clip rated 1000 V CAT IV 15 A,UL}
for PowerPad® & PEL series. ..... **Cat. #2140.44**

Lead – Replacement 10 ft (3 m) Black Stackable 600 V CAT IV
for PA31ER & PA32ER ..... **Cat. #5000.88**

Adapter – Replacement Power Plug Adapter for PA32ER ..... **Cat. #5100.14**

Order Accessories and Replacement Parts Directly Online
Check our Storefront at **www.aemc.com/store** for availability

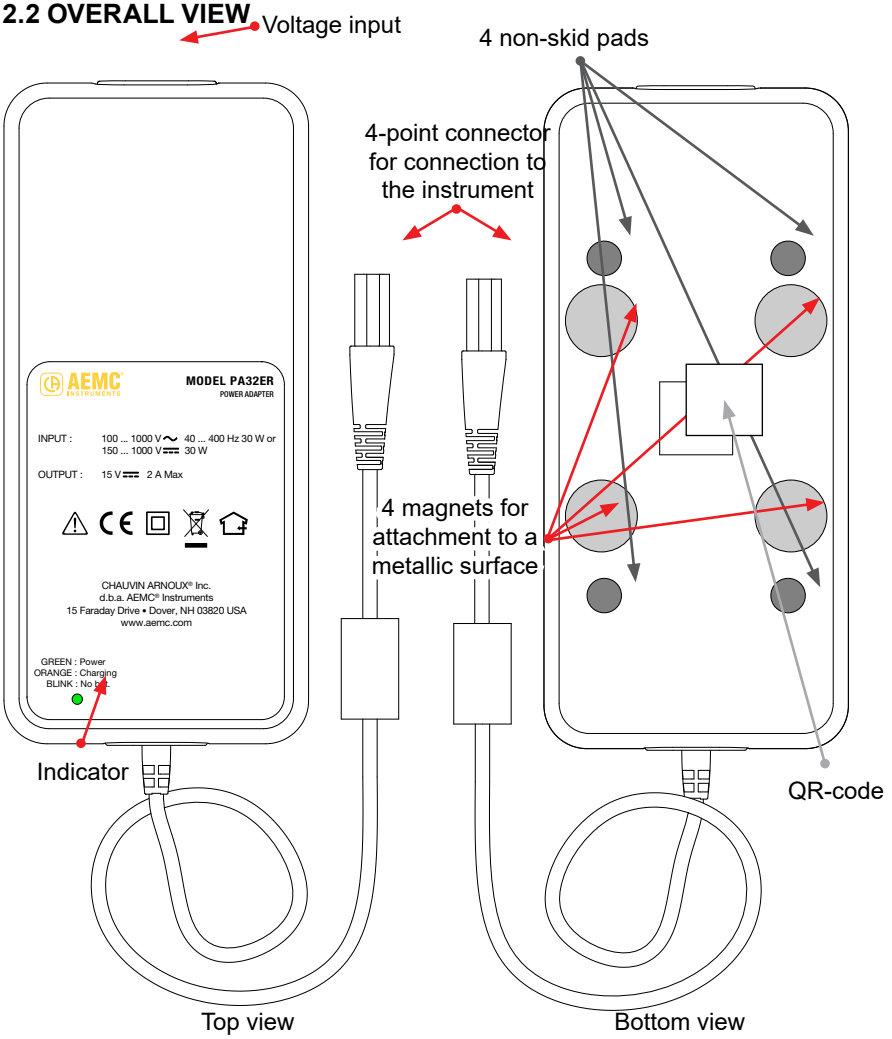
2. PRODUCT FEATURES

2.1 DESCRIPTION

The PA32ER power adapter and battery charger are used to power the attached instrument for long-term applications and thereby optimize the instrument's internal battery. It also serves to recharge the battery.

The power supply may come from the measurement source or from the wall plug.

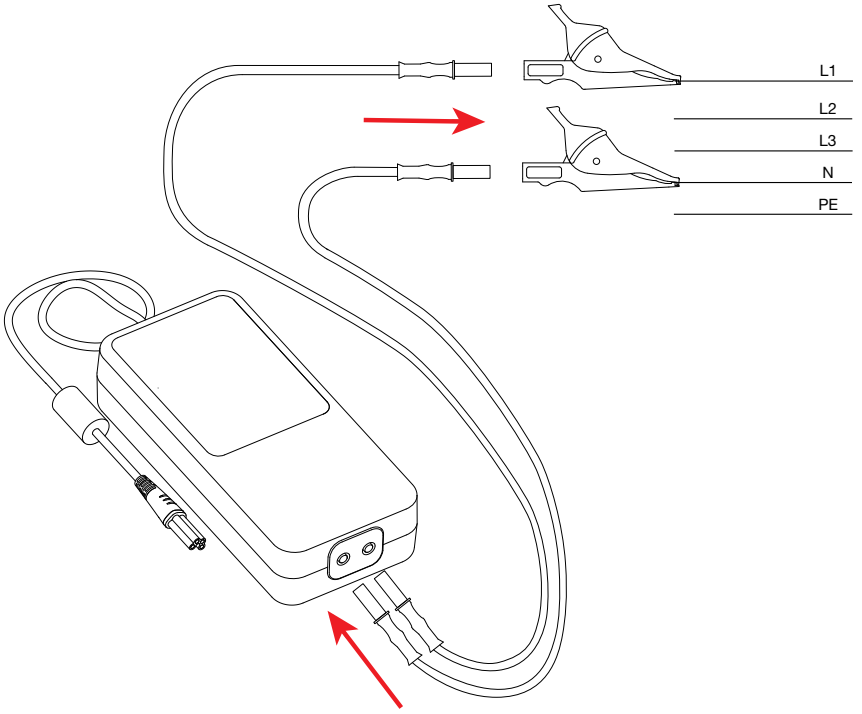
2.2 OVERALL VIEW



3. OPERATING INSTRUCTIONS

3.1 POWER FROM THE MEASUREMENT SOURCE

Using the leads provided and alligator clips, connect the adapter to a line voltage. Either between a phase (L1, L2, or L3) and neutral or between 2 phases.



In the image above, the adapter is connected between the neutral (N) and phase L1.

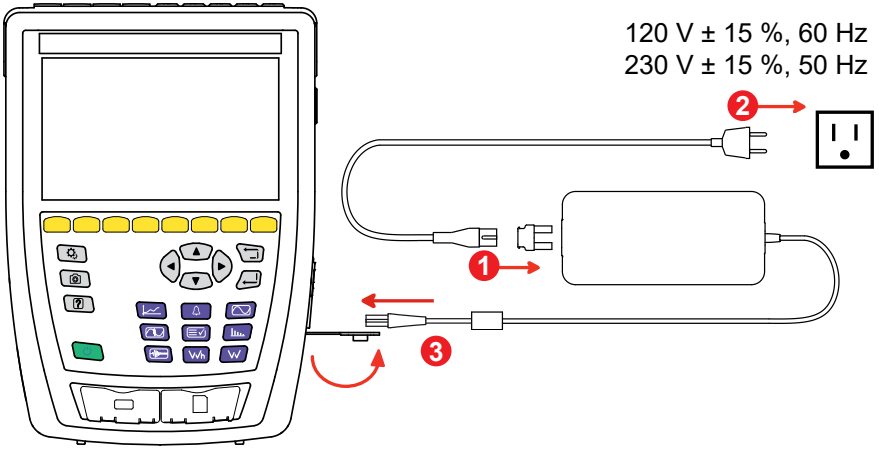
- Open the elastomer cap and connect the 4-point connector to the external power supply input of the instrument.

The indicator light on the front of the adapter displays:

- A steady green when the power is on
- A steady orange when the battery is charging
- If it blinks, the battery is missing and the instrument is powered by the external power supply alone.

3.2 CHARGE DIRECTLY FROM THE WALL PLUG

1. Connect the adapter banana plug to the PA32ER power adapter.
2. Connect the plug adapter cord between the adapter and the power socket.
3. Open the elastomer cap on the instrument and connect the 4-point connector of the power supply to the instrument.



The indicator light on the front of the adapter displays:

- A steady green when the power is on
- A steady orange when the battery is charging
- If it blinks, the battery is missing and the instrument is powered by the external power supply alone.

4. SPECIFICATIONS

4.1 REFERENCE CONDITIONS

Quantity of influence	Reference values
Ambient temperature	20 °C ± 3 °C

4.2 ELECTRICAL SPECIFICATIONS

4.2.1 Input voltage characteristics

- Voltage range: 100 V to 1000 V at a frequency from 40 Hz to 400 Hz
  150 V to 1,000 VDC
- Overload tolerance: ± 10% permanent, ± 15% temporary
- Frequency range: DC, 40 Hz - 70 Hz, 340 Hz - 440 Hz
- Input current: 0.5 ARMS max
- No-load consumption:

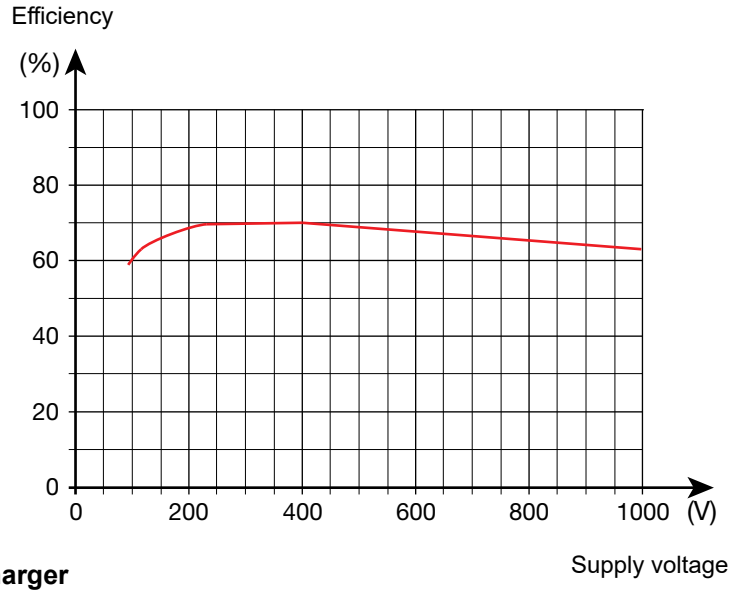
Supply voltage (V)	Input current (mA)	Apparent power (VA)	RMS power (W)
115	11.5	0.92	0.65
230	6	1.265	0.6
400	5.3	1.920	1
1,000	3.5	3.3	1.4

4.2.2 Ouput voltage characteristics

Characteristics	Values
Permanent output power	23 W
Output voltage @ 30 W	15 V ± 8%
Maximum no-load output voltage	16.2 V
Ripple of the output voltage	550 mVRMS
Maximum short-circuit duration	Permanent
Starting-up time at 110 V	< 13 s

4.2.3 Efficiency

The efficiency depends on the supply voltage and the load. In general, it is 68%.



4.2.4 Charger

Charging current: 1A

4.3 ENVIRONMENTAL CONDITIONS

Range of operation: from (-4 to 113) °F (-20 to +45) °C, from (30 to 95) %RH without condensation

Range of storage: from (-13 to 158) °F (-25 to +70) °C, from (10 to 90) %RH without condensation

Electric field: < 1 V/m
Magnetic field: < 40 A/m

Indoor use:
Altitude : < 2000 m
Degree of pollution: 3

4.4 MECHANICAL CHARACTERISTICS

Dimensions (L x D x H):	(8.7 x 4.4 x 2.1) in (220 x 112 x 53) mm
Lead:	5 ft (1.50 m), terminated by a specific 4-point connector
Weight:	Approximately 2 lbs (930 g)
Inrush protection:	IP54 when not in operation,
	IP50 in operation per IEC 60529
	IK08 per IEC 62262
Drop Test:	3.3 ft (1 m) per IEC 60068-2-31

4.5 COMPLIANCE WITH INTERNATIONAL STANDARDS

4.5.1 Electrical Safety

The instrument is compliant with IEC/EN 61010-1 and IEC/EN 61010-031 or BS EN 61010-031 for a voltage of 1000 V CAT IV, degree of pollution 3.

The instruments are compliant with FCC Rules part 1 under number 83TD07571.

4.5.2 Electromagnetic compatibility (EMC)

The instrument is compliant with standard IEC/EN 61326-1.

5. MAINTENANCE

The instrument contains no parts that can be replaced by untrained or unaccredited personnel. Any unapproved work or part replacement using equivalents may gravely compromise safety.

5.1 CLEANING

1. Disconnect the unit completely.
2. Use a soft cloth, moistened with soapy water.
3. Rinse with a damp cloth.
4. Dry rapidly with a dry cloth or forced air.

Do not use alcohol, solvents, or hydrocarbons to clean.

5.2 REPAIR AND CALIBRATION

To ensure that your instrument meets factory specifications, we recommend that it be sent back to our factory Service Center at one-year intervals for recalibration, or as required by other standards or internal procedures.

For instrument repair and calibration:

You must contact our Service Center for a Customer Service Authorization Number (CSA#). Send an email to repair@aemc.com requesting a CSA#. You will be provided a CSA Form and other required paperwork along with the next steps to complete the request. Then return the instrument along with the signed CSA Form. This will ensure that when your instrument arrives, it will be tracked and processed promptly. Please write the CSA# on the outside of the shipping container. If the instrument is returned for calibration, we need to know if you want a standard calibration or a calibration traceable to N.I.S.T. (includes calibration certificate plus recorded calibration data).

Ship To: Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
15 Faraday Drive, Dover, NH 03820 USA
Phone: (800) 945-2362 (Ext. 360)
(603) 749-6434 (Ext. 360)
Fax: (603) 742-2346 or (603) 749-6309
E-mail: repair@aemc.com

(Or contact your authorized distributor.)

Contact us for the costs for repair, standard calibration, and calibration traceable to N.I.S.T.

NOTE: You must obtain a CSA# before returning any instrument.

5.3 TECHNICAL ASSISTANCE

If you are experiencing any technical problems, or require any assistance with the proper operation or application of your instrument, please call, mail, fax, or e-mail our technical support team:

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
Phone: (800) 343-1391 (Ext. 351)
Fax: (603) 742-2346
E-mail: techsupport@aemc.com
www.aemc.com

5.4 LIMITED WARRANTY

The instrument is warrantied to the owner for a period of two years from the date of original purchase against defects in manufacture. This limited warranty is given by AEMC® Instruments, not by the distributor from whom it was purchased. This warranty is void if the unit has been tampered with, abused, or if the defect is related to service not performed by AEMC® Instruments.

Full warranty coverage and product registration is available on our website at www.aemc.com/warranty.html.

Please print the online Warranty Coverage Information for your records.

What AEMC® Instruments will do:

If a malfunction occurs within the warranty period, you may return the instrument to us for repair, provided we have your warranty registration information on file or a proof of purchase. AEMC® Instruments will repair or replace the faulty material at their discretion.

REGISTER ONLINE AT: www.aemc.com/warranty.html

5.5 WARRANTY REPAIRS

What you must do to return an Instrument for Warranty Repair:

First, request a Customer Service Authorization Number (CSA#) by email from our Service Department at repair@aemc.com (see link below). Then, return the instrument along with the signed CSA Form. Please write the CSA# on the outside of the shipping container. Return the instrument with postage or shipment pre-paid to:

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
15 Faraday Drive
Dover, NH 03820 USA
Phone: (800) 945-2362 (Ext. 360)
(603) 749-6434 (Ext. 360)
Fax: (603) 742-2346 or (603) 749-6309
E-mail: repair@aemc.com

Caution: To protect yourself against in-transit loss, we recommend you insure your returned material.

NOTE: You must obtain a CSA# before returning any instrument.

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