

■ Power Analyser Adjustment Kit

POWER CALIBRATION KIT



ENGLISH

User's Manual

You have just acquired the Calibration Kit for the C.A 82xx and C.A 833x Power Quality Analyser series. Thank you for your confidence.

To make optimum use of your instrument:

Please read and respect the precautions for use in this User's Manual.

SYMBOLS USED ON THE INSTRUMENT



Compliance with the "Low Voltage" and the "Electromagnetic Compatibility" European directives (73/23/EC & 89/336/EC).



Caution! Risk of danger.
Refer to the documentation to find out the nature of the potential hazard and any action to be taken.



Caution! Electric shock hazard.
Voltages presents close to this symbol can be dangerous.



Double insulation.



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.

PRECAUTIONS FOR USE

All the precautions for use listed below are imperative. If you do not implement them, there may be a risk of electric shock, explosion or spread of fire.

If you use this instrument in a way that is not specified, the protection provided may be compromised, leading to a risk of injury.

The safety of any system that might incorporate this instrument is the system assembler's responsibility.

Never use or connect on mains

This instrument must be used in association with a power calibrator for voltages not exceeding 300 V_{RMS} and currents not exceeding 6 A_{RMS} (50 Hz and 60 Hz).

WARRANTY

Our warranty is applicable for **one year** from the date when the equipment is made available (extract from our General Conditions of Sale, available on request).

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1. INTRODUCTION

The Power Calibration Kit is a set including an interconnection case "Power Calibration Case" and an interface software "Power Calibration Manager".

This set associated with a power calibrator and a PC allows semi-autonomous adjustment and calibration of the C.A 8220, C.A 8230, C.A 8332/34, C.A 8335 and AEMC 3943/45 power analysers.

The "Power Calibration Case" allows interconnection between the inputs of the power analysers and the single-phase power calibrator. In addition it includes switchable precision resistors

allowing adjustment of the continuity and temperature measurement function of the C.A 8220 power analyser.

The "Power Calibration Manager" software allows the computer to interface with power analysers in order to control adjustment and calibration routines for voltage, current and power measurements (also continuity and temperature measurements with C.A 8220).

2. PACKING

Description	Qty
"Power Calibration Case" interconnection case	1
CD ROM containing "Power Calibration Manager" software and the user's manual	1
Safety notice	1

3. PRESENTATION

3.1 Overall view



Rep.	Function
1.	Input voltage safety plugs
2.	Input current safety plugs
3.	Shunt voltage measurement safety plugs
4.	Rotary switch
5.	Voltage and current output cables with current connectors and voltage safety plugs
6.	Shunt voltage measurement safety plugs for 8336-33-31

Figure 1: Overall view of the "Power Calibration Case".

3.2 Physical description

This kit includes:

- ✓ A rigid yellow case including a panel which allows the connection to the power calibrator and fitted with the following elements:
 - Two safety plugs for input voltage.
 - Two safety plugs for input current connected to a shunt for loading the calibrator output current and producing a voltage proportional to its value.
 - A fuse holder containing a fuse for protecting the shunt.
 - Two safety plugs for shunt voltage measurement.
 - A rotary switch for directing voltage input of the power analyser either towards the voltage output of the calibrator or towards the precision resistors (only for C.A 8220 adjustment).
 - Voltage and current output cables with connectors for the currents and plugs for the voltages allowing connection to the power analyser.
- ✓ A CD ROM including the software "Power Calibration Manager" and the user's manual.

- A DMM or a voltmeter AC RMS

AC voltage accuracy:

< 0.06 % R + 30 μ V from 0 to 100 mV and from 50 Hz to 60 Hz
< 0.06 % R + 300 μ V from 100 mV to 1V and from 50 Hz to 60 Hz

- A personal computer with a Windows 7 operating system.
- Microsoft .Net Framework 4.0

3.3 Necessary additional components

- A single phase power calibrator (or a multi-function calibrator, such as the Metrix CX 1651 for example) with the following characteristics:
 - Voltage accuracy:

< 0.025 % + 0.024 V from 10 V_{RMS} to 300 V_{RMS} from 50 Hz to 60 Hz and THD < 0.2 %.
 - Current accuracy:

< 0.10 % + 0.004 A from 10 mA_{RMS} to 5 A_{RMS} and from 50 Hz to 60 Hz, and THD < 0.3 %
 - Phase accuracy:

< 0.15°
 - Frequency accuracy:

50 Hz \pm 0.1 Hz

4. USE

4.1 General information

The software is exclusively Microsoft Windows-compatible (2000 SP4 , XP 32 bits or Vista 32 bits) and has to be installed on a personal computer to control the power analyser.

It includes an install program which copies on the computer all the necessary files for the software execution.

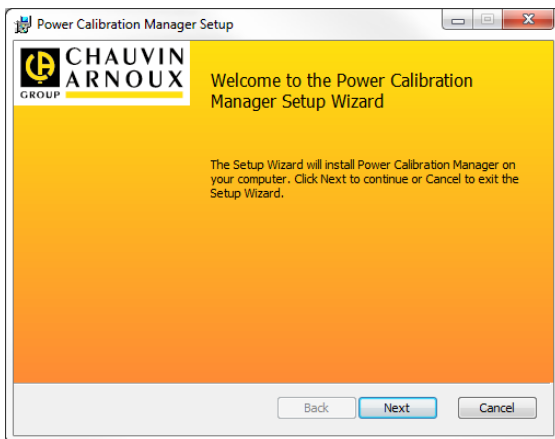
At the end of the installation of the software with the help of the setup wizard, at the first start, the software is inviting to use the default ID (identifier).

To obtain an official identification of the installation site in order to allow the traceability of adjustments, a key request can be established via e-mail by sending a form to the hotline Chauvin-Arnoux. The online support will return the key as soon as possible.

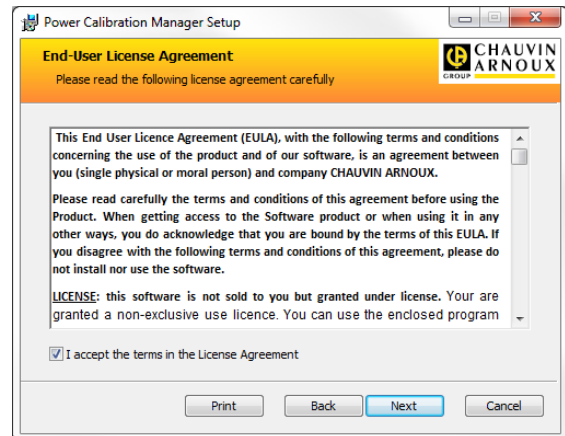
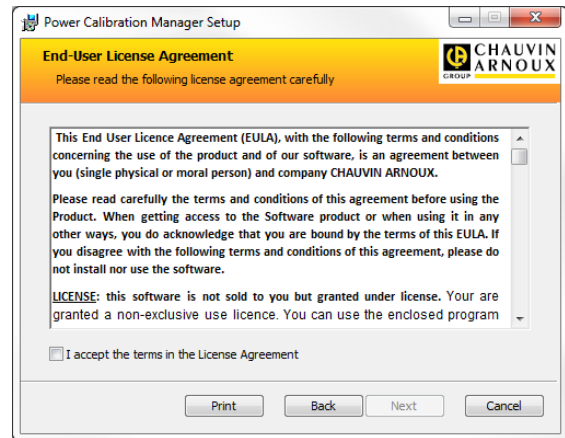
4.2 Software installation

This software does not require any minimal hardware configuration. Run the executable installer "setup.exe" from the CD ROM provided with the kit.

The following window is displayed:



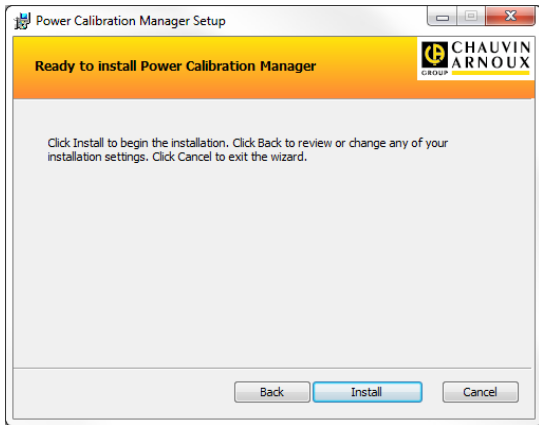
Click the "Next >" button to continue:



The default installation destination location is "C:\ProgramFiles\ChauvinArnoux\PowerCalibration Manager".

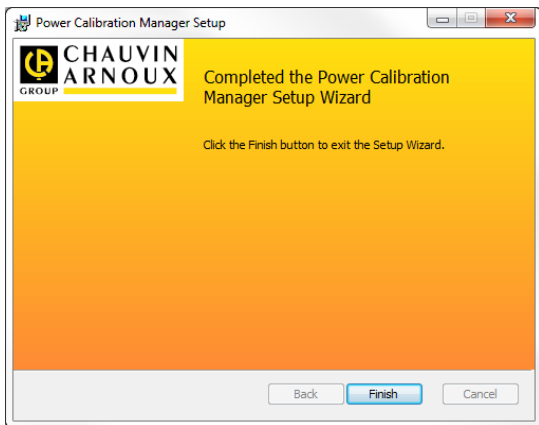
It is possible to choose a different location by clicking the "Browse" button, then pointing to an other folder and finally clicking the Next > button:

The program's shortcut will be installed in a new start menu folder called "Chauvin-Arnoux".



If the installation settings displayed on the window are ok, click the "Install" button.

Wait for installation to be completed and so the following window will be displayed:



Click the "Finish" button to exit.

4.3 Software registration

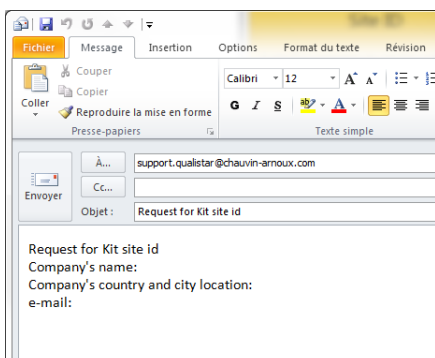
Software registration is necessary to obtain a key to customize the software and all the analysers which it has been used to adjust.

The advantage of registration is that it enables traceability of the instruments.

To obtain a registration key, click on the

Generate an email button in the settings window.

Enter the requested information:



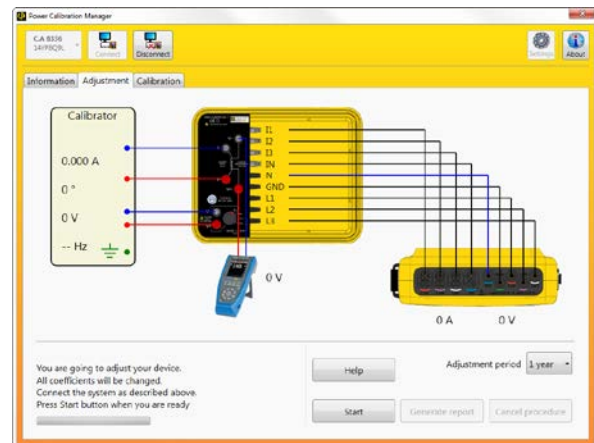
Click the "Validation" button:

The Chauvin-Arnoux internet support site will return a key allowing ID encryption as soon as possible.

To enter the key after obtaining it, click the "Enter the key" button, and then enter the key in the corresponding fields. To finish, click the "Validation" button.

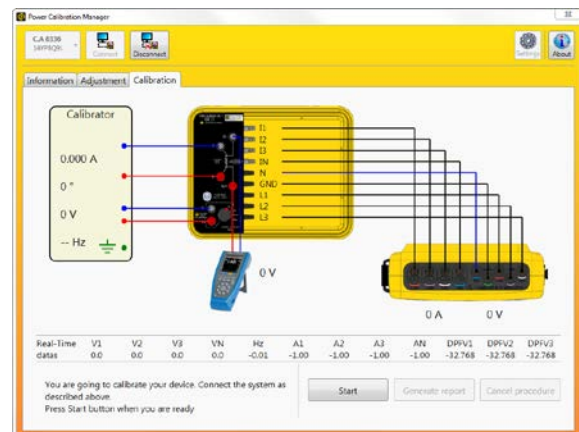
4.4 Adjustment method

Click the "Adjustment Tab" menu and follow the instructions:



4.5 Calibration method

To access the calibration function, click the "Calibration Tab" and follow the instructions.



5. MAINTENANCE

5.1 Important recommendation

For maintenance, use only the specified spare parts. The maker cannot be held liable for an accident that occurs following a repair not done by its after-sale service department or by an approved repairer.

5.2 Cleaning the casing

Clean the casing using a cloth moistened with soapy water. Rinse with a damp cloth.

Do not use solvents.

5.3 Repair

5.3.1 Repair under warranty and out of warranty

Contact your Chauvin-Arnoux local agency or one of the MANUMESURE regional agencies which will then open a return file and inform you of the procedure to be followed.

Information and contact details are available on our web site:

<<http://www.chauvin-arnoux.com/>>

or by phone at the following numbers:

- (00 33) 02 31 64 51 55
(Manumesure Technical Centre)
- (00 33) 01 44 85 44 85
(Chauvin Arnoux)

5.3.2 Repair outside metropolitan France.

For any work, under warranty or out of warranty, send the instrument back to your distributor.

6. GENERAL CHARACTERISTICS

6.1 Casing

Casing:	Polypropylene
Connectors:	Two voltage input safety plugs.
	Two current input safety plugs
	Two shunt output voltage safety plugs
Switch:	One four positions rotary switch
Cables	Five voltage safety cords
	Four current safety cords
Fuse holder	One 6x32 fuse holder with 6.3 A 380V fuse
Dimensions:	273 x 247 x 130 mm.
Mass:	2.3 kg.

6.2 Conformity

6.2.1 Mechanical protection

According to IEC 61010-1, the Power Calibration Case is regarded as an **Accessory**.

- Operating position: any position.
- Reference position in operation: on a horizontal plane, standing flat.
- Rigidity: as per IEC 61010-1.
- Drop test: as per IEC 61010-1.
- Tightness: IP 54 with the lid closed as per IEC 60529 (IP40 with the lid opened).

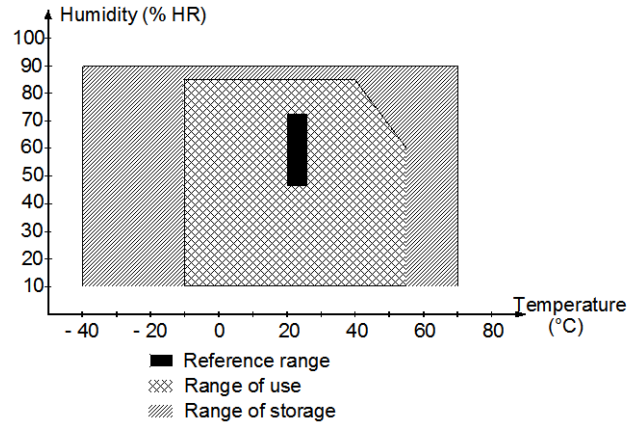
6.2.2 User safety

- Application of safety rules as per IEC 61010-1
- Pollution rating: 2.
- Service voltage: 300 Vrms.
- Dual insulation () on I/Os with respect to earth.
- For indoor use.

6.3 Environmental conditions

6.3.1 Climatic

The conditions of ambient temperature and relative humidity are as follows:



7.3.2 Altitude

Use: from 0 to 2 000 m.

Storage: from 0 to 10,000 m.

7. REFERENCE CONDITIONS

7.1 Adjustment reference conditions

The table below shows the reference conditions required during an adjustment operation:

Influence quantity	Reference conditions
Frequency:	50 Hz \pm 0.1 Hz
Ambient temperature:	23 °C \pm 3 K
Relative humidity:	[45 % ; 75 %]
Atmospheric pressure:	[860 hPa ; 1060 hPa]
Altitude:	< 2000 m

7.2 Calibration reference conditions

The table below is shows the reference conditions required and the values to respect during a calibration operation:

Influence quantity	Reference conditions
Ambient temperature:	23 °C \pm 3 K
Relative humidity:	[45 % ; 75 %]
Atmospheric pressure:	[860 hPa ; 1060 hPa]
Phase-to-earth voltage:	[50 V _{RMS} ; 300 V _{RMS}] 50 Hz and 60 Hz
Current (Clamp channel)	[30 A _{RMS} ; 1000 A _{RMS}] 50 Hz and 60 Hz
Current (AmpFLEX Channel)	[300 A _{RMS} ; 6500 A _{RMS}] 50 Hz and 60 Hz

8. HOW TO ORDER

POWER CALIBRATION KIT	P01102132
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The kit is composed of the following elements:

- One "Power Calibration Case" adjustment case.
- One CD ROM containing the "Power Calibration Manager" adjustment software and the user's manual.
- One Safety Notice.



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