

# Optimize Your Energy Efficiency with the PEL100

**Control your consumption,  
manage your energy spending  
and monitor your network**



With their ergonomic design suitable for all types of cabinets, the PEL loggers provide all your power and energy measurements simultaneously.

- Single-phase, split-phase and three-phase installations
- Installation without cutting off the mains power supply
- Harmonic analysis up to the 50th order
- Bluetooth, Ethernet and USB Communication
- Automatic recognition of the sensors connected
- Recording on SD card
- Real-time communication with a PC and analysis with the DataView<sup>®</sup> software

[www.pel100.com](http://www.pel100.com)

**Power  
and Energy  
Loggers**

**IP  
54**

**1000 V CAT III**



# For economical, sustainable buildings, improve your energy efficiency

In the context of a worldwide initiative to protect the environment, Europe has set itself the target of reducing energy consumption by 20%. Today, industry and the building sector account for more than 50 % of energy consumption. It is therefore crucial to optimize energy consumption if we are to fulfil the regulatory requirements.

The PEL 102 and PEL 103 loggers are power and energy measurement loggers for all electrical installations. The measurements are performed with 3 current sensors and voltage inputs.

They can be used to view all the electrical parameters and to take advantage of

the measurement, energy metering and communication functions.

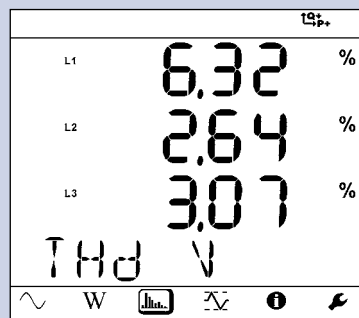
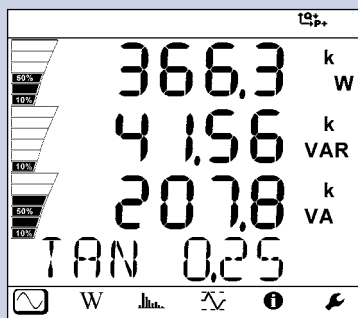
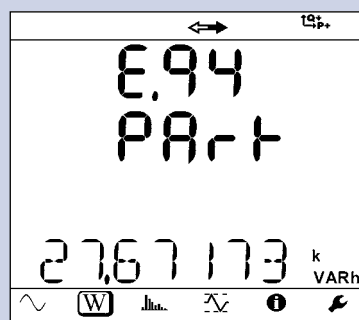
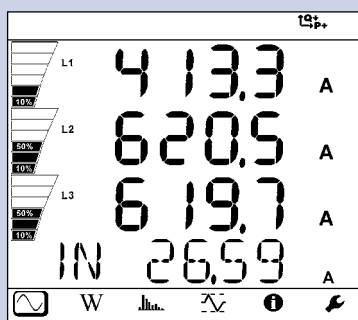
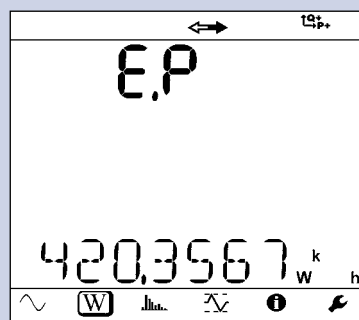
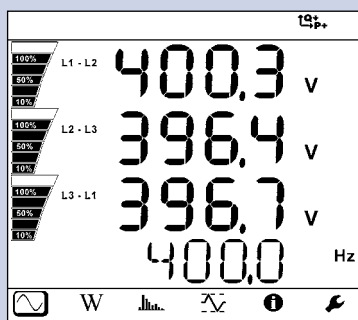
It offers users all the necessary measurements for successful energy efficiency projects and monitoring of your electricity distribution system.

The PEL100 family of energy meters makes

it simple to add metering and measurement points in electrical cabinets where most of the space is already occupied. Because they are magnetic, they can be set up very easily in any cabinet and do not cause any obstruction once the cabinet door is closed.

## Functions:

- RMS frequency, voltage and current
- VA, W and var power values
- VAh, Wh (source, load) and varh (4 quadrants) energy values, total energy
- $\cos \phi$ ,  $\tan \phi$  and power factor (PF)
- Crest factor
- THD calculated for currents and voltages
- Harmonics up to the 50th order for currents and voltages
- DC, 50 Hz, 60 Hz and 400 Hz measurements
- RMS AC or AC+DC
- Display on LCD screen
- Recording of measurements and calculation results on SD card
- Automatic recognition of the sensor type connected
- Large number of network types: split-phase, three-phase with or without neutral, etc.
- USB and Bluetooth communication
- Software for data transfer, real-time communication with a PC and report generation



# Applications

## Monitoring and mapping consumption on a site

Our PEL100 loggers can track even the slightest consumption in a factory, workshop, building, agency, etc. They simultaneously allow real-time consumption monitoring alongside historical and comparative analysis of consumption.

## Predictive maintenance

When installed for a long period in a cabinet, PEL100 loggers constantly monitor the active, apparent and reactive power values on the electrical network involved. This means it will instantly detect whenever the subscribed power threshold is exceeded.

With the software for automatically generating



and printing reports, balance sheets, graphs or DataView summaries, users can act quickly on the cause of this overconsumption which will lead to higher bills. Indeed, every time your subscribed power threshold is exceeded, your bill will increase.

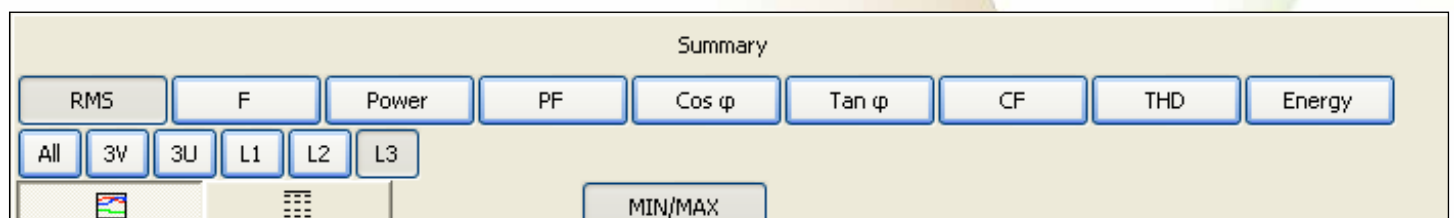
## PEL Transfer software

This application software allows:

- Configuration of PEL100 loggers
- Verification of the connections before starting to record
- Downloading of the measurements recorded in the PEL100 loggers
- Display of the various measurement and analysis results

With the comprehensive DataView processing software, you can also create customized reports.

Generate energy consumption reports more easily



## Networking and centralized consumption management

By setting up several PEL100 loggers on a general electrical distribution system, local authorities for example can simplify their consumption management by controlling the allocation of the different types of consumption:

- street-lighting network
- common-area lighting network
- common service network
- general single-phase distribution network
- three-phase distribution network

## Measuring the savings

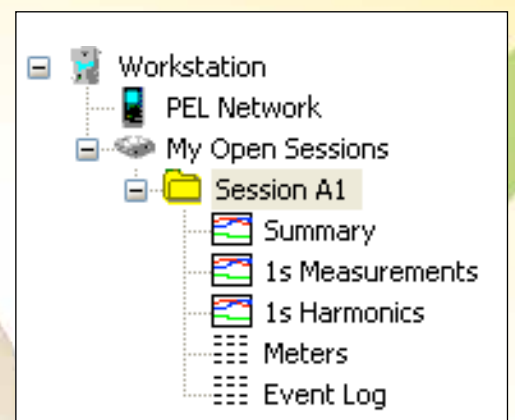
The recordings made with PEL100 electrical measuring instruments are time/date-stamped. This makes it very simple to measure the gains achieved by comparing the recordings before and after modifying the installation.

The reference is provided by the recordings from the PEL100 loggers before the modifications were made. You can then carry out the necessary work for maintenance or improvement of the electrical network or equipment. A correctly-positioned PEL100 will quickly enable you to target the places where work is needed without delay.

Finally, a monitoring phase will help you to determine whether the solutions



implemented are sufficient and, above all, to accurately measure any savings achieved. The monitoring by the PEL100 provides the recordings which will be compared with the reference.



## SPECIFICATIONS:

Models	PEL102	PEL103
<b>Technical specifications</b>		
Display	Without	Triple digital display
Installation types	Single-phase, split-phase, three-phase with or without neutral and many other specific configurations configurations	
Accuracy class	0.2%	
<b>Electrical Specifications</b>		
Number of channels	3 voltage inputs / 3 current inputs (calculation of neutral current)	
Network frequency	50 Hz, 60 Hz & 400 Hz	
Voltage range	0 to 1,000 V AC and DC	
Current sensors supported	MN93 2 to 240 A <sub>AC</sub> MN93A 0.005 A <sub>AC</sub> to 5 A <sub>AC</sub> / 0.1 A to 120 A <sub>AC</sub> C193 3 A to 1,200 A <sub>AC</sub> A193 & MA193 100 mA to 10,000 A <sub>AC</sub> PAC93 10 A to 1,000 A <sub>AC</sub> / 10 A to 1,400 A <sub>DC</sub> E3N 50 mA to 10 A <sub>AC/DC</sub> / 100 mA to 100 A <sub>AC/DC</sub>	
Voltage ratio / Current ratio	Up to 650,000 V / up to 25,000 A	
<b>Calculated measurements</b>		
Power	10 W to 10 GW / 10 var to 10 Gvar / 10 VA to 10 GVA	
Energy	up to 4 EWh / 4 Evarh / 4 EVAh	
Phase	Cos φ, tan Φ, PF	
Harmonics	up to the 50th order	
<b>Complementary functions</b>		
Phase order	Yes	
Min / Max	Yes	
Mounting	Magnet, hook	
<b>Recording</b>		
Sampling / Acquisition rate / Aggregation	128 s/period - 1 measurement per second - from 1 min to 60 min	
Memory	SD card (SD-HC up to 32 GB)	
Communication	Bluetooth (Class 2), Ethernet, USB	
Power supply	110 V - 250 V (+ 10%, - 15 %) at 50-60 Hz & 400Hz	
Safety	IEC 61010 600 V CAT IV – 1,000 V CAT III	
<b>Mechanical Specifications</b>		
Dimensions	256 x 125 x 37 mm without sensor	
Weight	900 g	950 g
Casing	IP54 , UL (pending)	



### STATE AT DELIVERY:

One PEL 102 or PEL 103 power and energy logger:

- 4 measurement leads (straight banana / straight banana – 3 m long – black)
- 4 crocodile clips (black)
- 3 MA193 mini-AmpFLEX sensors (cable length 3 m)
- 1 SD card (2 GB)
- 1 SD-USB adapter
- 1 set of inserts (ends of leads and current sensors)
- 1 mains power cable (1.8 m long – 250 V)
- 1 USB cable (Type A / Type B - 1 m long)
- 1 Multifix mounting systems
- 1 operating manual (on CD)
- 1 bag
- 1 safety datasheet

### REFERENCE TO ORDER:

- PEL102 Logger without current sensors** ..... P01157152  
**PEL103 Logger without current sensors** ..... P01157153

### ACCESSORIES:

- DataVIEW® software** ..... P01102095  
**Bag No 23** ..... P01298078  
**Leads/clamps kit** ..... P01295476  
**Set of id. rings/inserts** ..... P01102080  
**5 A box** ..... P01101959  
**MN93 clamp** ..... P01120425B  
**MN93A clamp** ..... P01120434B  
**C193 clamp** ..... P01120323B  
**PAC93 clamp** ..... P01120079B  
**AmpFLEX™ A193-450mm clamp** ..... P01120526B  
**AmpFLEX™ A193-800mm clamp** ..... P01120531B  
**Mini-AmpFLEX™ MA193, 200 mm** ..... P01120580  
**E3N clamp\*** ..... P01120043A  
**E3N adapter\*** ..... P01120081  
**MultiFIX** ..... P01102100Z  
**Mains power cable** ..... P01295174

**FRANCE**  
**Chauvin Arnoux**  
 190, rue Championnet  
 75876 PARIS Cedex 18  
 Tel: +33 1 44 85 44 38  
 Fax: +33 1 46 27 95 59  
 export@chauvin-arnoux.fr  
 www.chauvin-arnoux.fr

**UNITED KINGDOM**  
**Chauvin Arnoux Ltd**  
 Unit 1 Nelson Ct, Flagship Sq, Shaw Cross Business Pk  
 Dewsbury, West Yorkshire - WF12 7TH  
 Tel: +44 1924 460 494  
 Fax: +44 1924 455 328  
 info@chauvin-arnoux.co.uk  
 www.chauvin-arnoux.com

**MIDDLE EAST**  
**Chauvin Arnoux Middle East**  
 P.O. BOX 60-154  
 1241 2020 JAL EL DIB - LEBANON  
 Tel: +961 1 890 425  
 Fax: +961 1 890 424  
 camie@chauvin-arnoux.com  
 www.chauvin-arnoux.com

 **CHAUVIN  
ARNOUX**  
GROUP