CHAUVIN® ARNOUX
CHAUVIN ARNOUX GROUP

PEL102
PEL103

Optimize Your Energy Efficiency with the PEL100

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

Power and Energy Loggers

IP 54

1000 V CAT III

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 PEL Transfer software

www.pel100.com

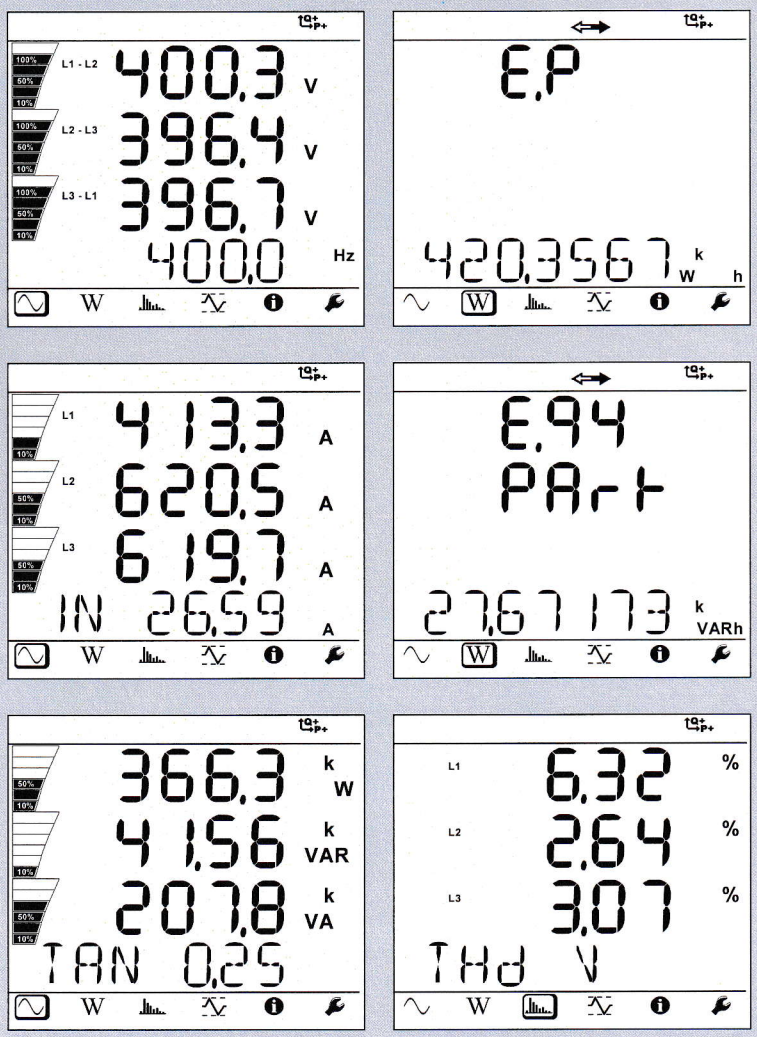
For economical, sustainable buildings, improve your energy efficiency

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 fulfill the regulatory requirements.

The PEL102 and PEL103 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. They offer 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 φ, tan Φ 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.
- Bluetooth, Ethernet and USB Communication
- Software for data transfer, real-time communication with a PC and report generation



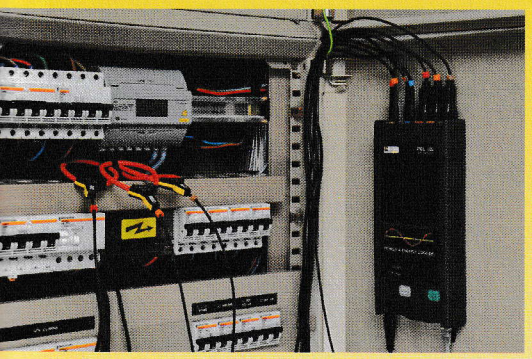
Applications

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 they 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.

Networking and centralized consumption management

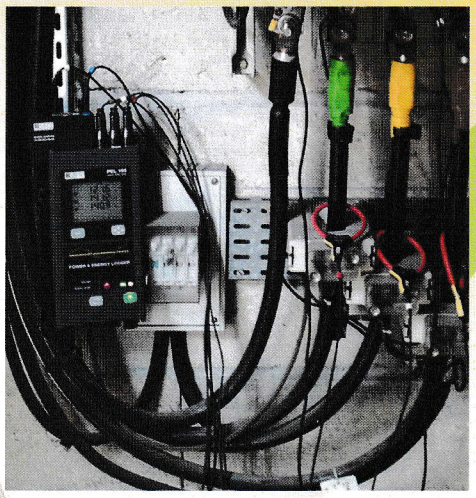
By setting up several PEL100 loggers on a general electrical distribution system, local authorities for example can simplify their consumption management by controlling the allocation of the different types of consumption:

- 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.



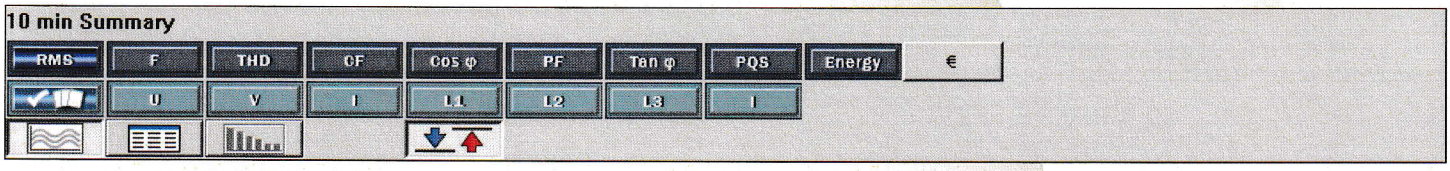
PEL Transfer software

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.

DataView® can thus be used to generate energy consumption reports more easily.



SPECIFICATIONS:

Models	PEL102	PEL103
Display	Without	Triple digital display
Installation types	Single-phase, split-phase, three-phase with or without neutral and many other specific configurations	
Number of channels	3 voltage inputs / 3 current inputs (calculation of neutral current)	
Measurements		
Network frequency	50 Hz, 60 Hz & 400 Hz	
Voltage (measurement ranges / best accuracy)	10.00 -1,000 VAC/DC / ± 0.2 % + 0.5 V	
Current (depending on sensor) (measurement ranges / best accuracy)	5 mAAC to 10 kAAC / 50 mADC to 1.4 kADC / ±0.5 %	
Calculated measurements		
Ratio	Up to 650,000 V / up to 25,000 A	
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 ($E = 10^{18}$)	
Phase	cos φ, tan Φ, PF	
Harmonics	up to the 50th order	
Complementary functions		
Phase order	Yes	
Min / Max	Yes	
Mounting	Magnet, hook	
Recording		
Sampling / Acquisition rate / Aggregation	128 S/period - 1 measurement per second - from 1 min to 60 min	
Memory	SD card 2 GB (SD-HC up to 32 GB)	
Communication	Ethernet, Bluetooth and USB	
Power supply	110 V - 250 V (+10 %, -15 %) at 50-60 Hz & 400 Hz	
Safety	IEC 61010 600 V CAT IV – 1,000 V CAT III	
Mechanical Specifications		
Dimensions	256 x 125 x 37 mm without sensor	
Weight	900 g	950 g
Casing	IP54, UL (pending)	

Models	MN93	MN 93A	MA193-250	MA193-350	PAC93	A193-450	A193-800	C193	E3N	J93/J193
Measurement range	500 mA to 200 AAC	0.005 AAC to 100 AAC	200 mA to 10 kAAC	200 mA to 10 kAAC	1 A to 1,000 AAC 1 A to 1,300 ADC	200 mA to 10 kAAC	200 mA to 10 kAAC	1 A to 1,000 AAC	50 mA to 10 AAC/DC 100 mA to 100 AAC/DC	50 A to 3,500 AAC 50 A to 5,000 ADC
Clamping Ø / length	20 mm	20 mm	Ø 70 mm / 250 mm	Ø 70 mm / 350 mm	1 x Ø 39 mm 2 x Ø 25 mm	Ø 140 mm / 450 mm	Ø 250 mm / 800 mm	52 mm	11.8 mm	72 mm
IEC 61010	600 V CAT III / 300 V CAT IV		1,000 V CAT III / 600 V CAT IV	1,000 V CAT III / 600 V CAT IV	600 V CAT III / 300 V CAT IV	1,000 V CAT III / 600 V CAT IV		600 V CAT IV	600 V CAT III / 300 V CAT IV	600 V CAT III / 1,000 V CAT IV

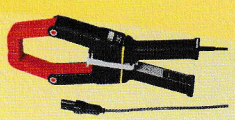
STATE AT DELIVERY:

One PEL102 or PEL103 power and energy logger:

4 measurement leads (straight banana / straight banana – 3 m long – black), 4 crocodile clips (black), 1 SD card (2 GB), 1 set of rings and inserts (for ends of leads and current sensors), 1 mains cable, 1 USB cable (Type A / Type B), 1 MultiFIX mounting systems, 1 operating manual (on CD), 1 bag, 1 safety datasheet, PEL Transfer PC software, 1 quick start-up guide, 1 SD-USB adapter.

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® A193-450 mm clamp **P01120526B**
AmpFlex® A193-800 mm clamp **P01120531B**
MiniFlex® MA193-250 mm clamp **P01120580**
MiniFlex® MA193-350 mm clamp **P01120567**
E3N clamp **P01120043A**
E3N adapter **P01102081**
J93 clamp **P01120110**
J193 clamp **P01120111**
MultiFIX **P01102100Z**
Mains power cable **P01295174**
PEL100 mains adapter **P01102134**

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