PEL 105
Power and energy logger

For your energy audits in the field

- 5 voltage inputs & 4 current inputs
- All-terrain shockproof casing resistant to UV light and high temperatures
- Ideal for mounting on electricity poles
- Self-powered by its voltage inputs up to 1,000 V
- Continuous recording at 200 ms intervals
- Measurements in compliance with IEEE 1459

IP 67

1000 V CAT IV

ETHERNET   Bluetooth   WIFI   USB   SD   Eco Conception

Measure up

PEL 105 POWER AND ENERGY LOGGER

Connections equipped with IP67 watertight plugs

Thanks to its multiple voltage and current inputs, the PEL 105 can be used for all your measurements on LV networks, including the neutral-earth voltage and the neutral current.

Electrical cabinet

Large backlit screen with triple display & backlit symbol indicating the measurements in progress

Ergonomics

Designed for use in the field, the PEL 105 is rated **IP67, waterproof and rugged, as well as withstanding high temperatures and UV light**. It is a stand-alone instrument self-powered via its voltage inputs up to 1,000 V. Compatible with many current sensors, the PEL 105 is also equipped with automatic sensor recognition to make it easier to use.
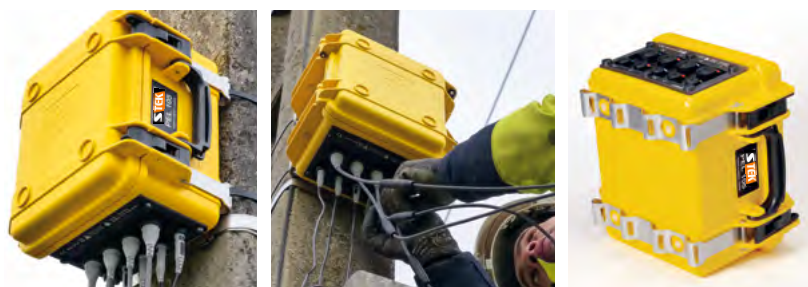
System for mounting on electricity poles

Recording and monitoring

*Depending on the applicable international or national regulations, companies are obliged to perform auditing with the aim of improving **energy performance**.*

The PEL 100 loggers can be used to **measure, record and analyse power values** (W, var, VA) and energy values (kWh, kvarh, kVAh). They also record the PF and DPF at the same time. With its all-terrain casing, the PEL 105 can be used outdoors on buildings, transformers, electrical cabinets, etc. Equipped with specific mounting accessories; the PEL 105 can also be installed as fixed equipment, directly at the top of an electricity pole.

Communication

Designed for use in the field, the PEL 105 can be set up in places where access may be difficult. There are several ways of monitoring the measurements in real time or recovering the data:
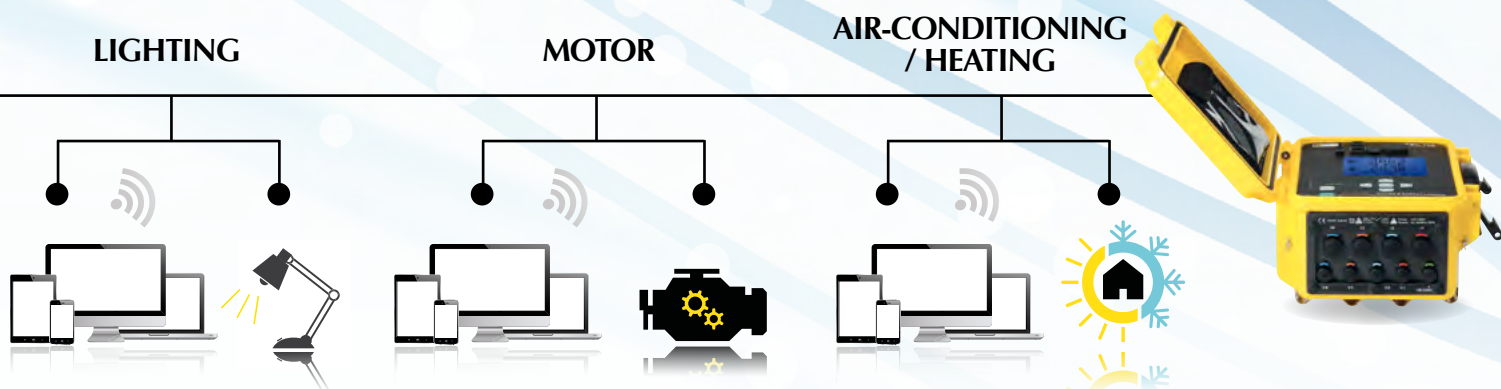
↳ USB
↳ SD Card
↳ Ethernet
↳ WiFi or Bluetooth for PC and tablet

Users can program the reports which they wish to receive by email. It is also practical to recover the measurement results remotely via Wifi, on a tablet for example, particularly when access to the PEL105 is difficult.

LIGHTING   **MOTOR**   **AIR-CONDITIONING / HEATING**

Energy efficiency

Cutting consumption: a major challenge!

Cutting energy consumption is a top priority for companies. It helps them to reduce both their carbon footprint and their operating costs.

Measurement is crucial to achieve this.

Power and energy loggers set up on the various electrical feeders help to assess the relative weight of each line on overall consumption, define a load profile for the installation and thus determine the priority orientations for improvement - simply and without interrupting service.

The ISO 50001 standard guides organizations when they set up an energy management system. There are several focuses for research and analysis which help to obtain the required results:

↳ by analysing the construction elements (building, insulation, etc.), users can check **passive energy efficiency**

↳ by using high-performance instruments and smart measurement, test and control systems (variable speed drives or load-shedding devices), users can optimize operation of the installation, or in other words its **active energy efficiency**

In order to define the points on an installation which need to be improved, consumption measurements must be performed.
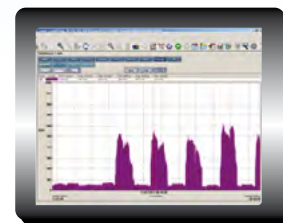
Printing reports

Using the measurements from the **PEL105** and the **DataView® software**, it is possible to print out measurement reports.

↳ Once these measurements have been analysed, they help to determine the action needed to improve energy efficiency.

↳ When this action has been taken, a new measurement campaign allows you to check that the expected energy savings are genuinely achieved (after modification of the installation, for example) by simply comparing the results with the targets set initially.

↳ Monitoring is then set up to check that the day-to-day savings achieved are maintained over the long term and to avoid further drift.

≡ PEL 105: POWER AND ENERGY LOGGER

DISPLAY	With backlit triple digital display
Type of installation	Single-phase, split-phase, three-phase with or without neutral and many other specific configurations
Number of inputs	5 voltage inputs, 4 current inputs
Number of channels	4 voltage channels, 4 current channels
MEASUREMENTS	
Network frequency	DC, 50 Hz, 60 Hz and 400 Hz
Voltage (measurement ranges / best accuracy)	10.00 V to 1,000 V_{AC} @ 50/60 Hz, or 600 V_{AC} @ 400 Hz / 1,000 V_{DC}
Current (depending on sensors) (measurement ranges)	5 mA_{AC} to 10 kA_{AC} / 50 mA_{DC} to 5 kA_{DC}
Calculated measurements	
Ratio	Up to 650,000 V / up to 25,000 A
Power	20 W to 10 GW / 20 var to 10 Gvar / 20 VA to 10 GVA
Energy	Up to 4 EWh / 4 EVAh / 4 Evarh (E = 10^{18})
Phase	cos φ, tan Φ, PF
Harmonics	Up to the 50th order
Additional functions	
Phase sequence	Indication of valid connection
Min / Max	On all quantities
Recording	
Sampling rate/ Acquisition rate / Aggregation	128 samples/period - 5 measurements/s - from 1 min to 1 hr
Storage	SD card, 8 GB (up to 32 GB with SD-HC card)
Communication	Ethernet, Bluetooth, Wifi and USB
Power supply	Self-powered internally from 94 to 1,000 V @ 50-60 Hz & 400 Hz / DC
Safety	IEC 61010 1,000 V CAT IV
Mechanical specifications	
Dimensions	245 x 270 x 180 mm
Weight	< 4 kg
Protection	IP 67

Model	MN93	MN 93A	MA193-250	MA193-350	PAC93	A193-450 A196-450	A193-800	C193	E3N	J93
Measurement range	500 mA to 200 A_{AC}	0.005 A_{AC} to 100 A_{AC}	200 mA to 10 kA_{AC}		1 A to 1,000 A_{AC} 1 A to 1,300 A_{DC}	200 mA to 10 kA_{AC}		1 A to 1,000 A_{AC}	50 mA to 10 $A_{AC/DC}$ 100 mA to 100 $A_{AC/DC}$	50 to 3,500 A_{AC} 50 to 5,000 A_{DC}
Clamping Ø / length	20 mm		Ø 70 mm / 250 mm	Ø 100 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		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 IV / 1,000 V CAT III

State at delivery

1 PEL105 logger delivered with 5 x 3 m black silicone cables, straight banana / straight banana, 5 black 1,000 V CAT IV crocodile clips, 1 set of inserts/rings, 4 AmpFLEX® IP67 A196 3 m long, 1 set of waterproof plugs, 1 SD card, 1 USB cable, 1 bag, 1 safety datasheet, a quick start-up guide and an operating manual on USB key.

References & Accessories

PEL105 with sensors P01157155
Set of plugs P01102147
Pole-mounting kit P01102146

DataVIEW® software P01102095
Crocodile clips kit (x 5) P01102099
Set of inserts/rings P01102080
5 A adapters P01101959
MN93 clamp P01120425B
MN93 clamp P01120434B
C193 clamp P01120323B
PAC93 clamp P01120079B
AmpFlex® A193-450 mm clamp P01120526B
AmpFlex® A193-800 mm clamp P01120531B
AmpFlex® A196-450 mm clamp P01120552
MiniFlex® MA193-250 mm P01120580
MiniFlex® MA193-350 mm P01120567
E3N clamp P01120043A
E3N adapter P01102081
Cables kit (x 5) BB196 .... P01295479

STEK