XENIT by ATEX

MADE IN ITALY

# HELP-LT

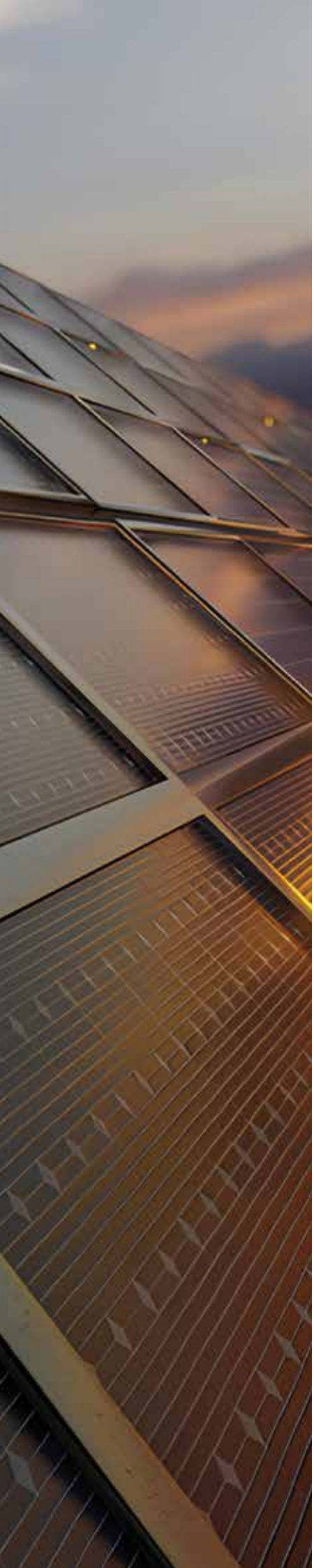
Detection system for the presence of cables and degradation of power lines.

Energy efficiency monitoring of single-phase, three-phase lines in AC.

**Integrated connectivity.**


**XENIT.IT**

Xenit is a division of ATEX INDUSTRIES for Photovoltaic and Security systems.



XENIT by ATEX

Xenit is engaged in the continuous research and development of **electronic devices for the revamping and management of photovoltaic energy**, as well as for the **safety and monitoring of AC and DC power lines**.

Discover our website

# Photovoltaic Revamping

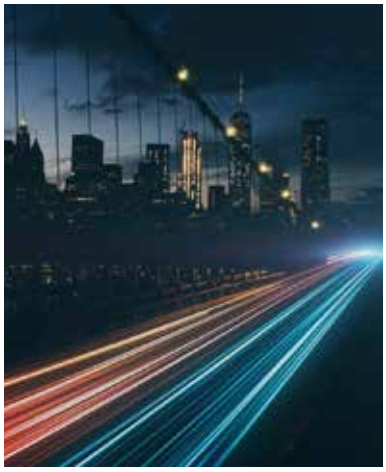
With the APID series of devices, we restore the power of PV systems affected by P.I.D., a degradation phenomenon that causes the progressive loss of power and consequent economic damage. On new systems APID prevents the onset of P.I.D.

# Energy Management

MIA ENERGY is an automatic system that optimises the self-consumption of the energy produced by residential photovoltaic systems and improves the ability to consume the energy produced immediately and on site, shifting consumption to the peak phase of energy production.

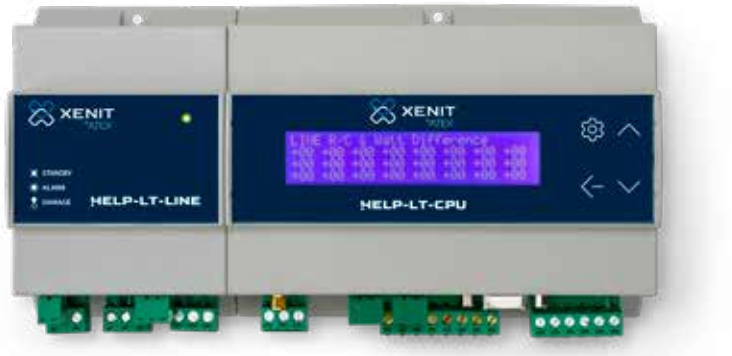
# Electric lines monitoring

The patented HELP series makes AC and DC power lines safe, monitoring the presence of cables, energy efficiency, status and the presence of loads. HELP is an advanced system, which can be integrated with IoT services, which recovers and shares information, facilitating predictive actions.



# Made in Italy technology
## for an efficient monitoring

Cable presence detection system, load monitoring, energy efficiency on single-phase or three-phase electrified lines in AC or without voltage, with integrated connectivity.
The HELP-LT system allows you to directly check the presence and electrical quantities of a system, up to a maximum of 24 single-phase lines.
It's possible to monitor up to a maximum of 8 three-phase lines, thanks to the use of 3 LINE devices for each phase.




**HELP-LT-LINE**
(cod.13064.2081.0)

**HELP-LT-CPU**
(cod.13064.2080.0)

## **Modular system** made up of:

### HELP-LT-CPU
a master device.

### Display LCD
dedicated to general control and interfacing with the outside world, through various communication ports.

### HELP-LT-LINE
a maximum of 24 slave devices, called HELP-LT-LINE, each used to control one single-phase line.

### Bus RS485
it connects all devices.

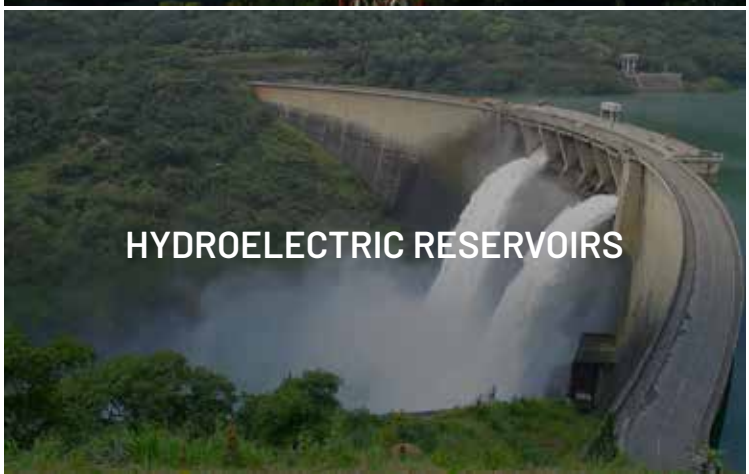
# Areas of application

Protect power lines from theft and anomalies










# Connectivity

## for remote control and predictive maintenance

The hardware predispositions on board HELP-LT guarantee remote control of the correct operation of the systems. It will be possible to activate deterrent actions and predictive maintenance, thanks to the instantaneous publication of data.

### RS485 port

it connects the slaves with each other

### RS485 ModBus port

### Integrated modem

GSM/GPRS

### RJ45 Ethernet port

10/100 Mbit with ModBus
over TCP/IP protocol

### It can be integrated with IoT services

they allow you to use and share
information in the Cloud

# Flexible and customizable

HELP-LT is an easy-to-install tool that can be used on a wide range of existing and new systems.

It can be connected and integrated with other devices or supervision platforms already present. In addition to the inputs/outputs for connecting and controlling the power lines, 4 analog inputs are available for the connection to any external sensors/dry contacts and 3 relay outputs.

ATEX develops, in its XENIT division, custom hardware & software versions of this product, for special applications.


**4 analog inputs**
for connection to any
external sensors/dry contacts

**3 relay outputs**
for custom functions

# Connection diagrams

examples on single-phase and three-phase lines

## HELP-LT

Example of monitoring 3 single-phase lines:
lighting, ventilation, pumping.

*Customizable solution*

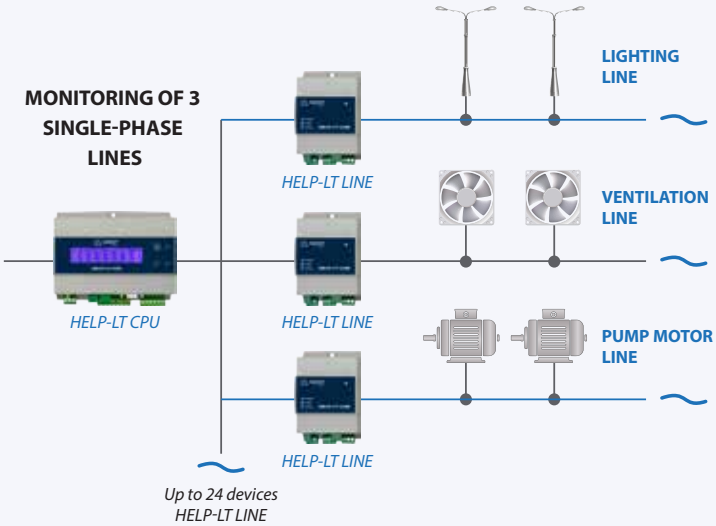


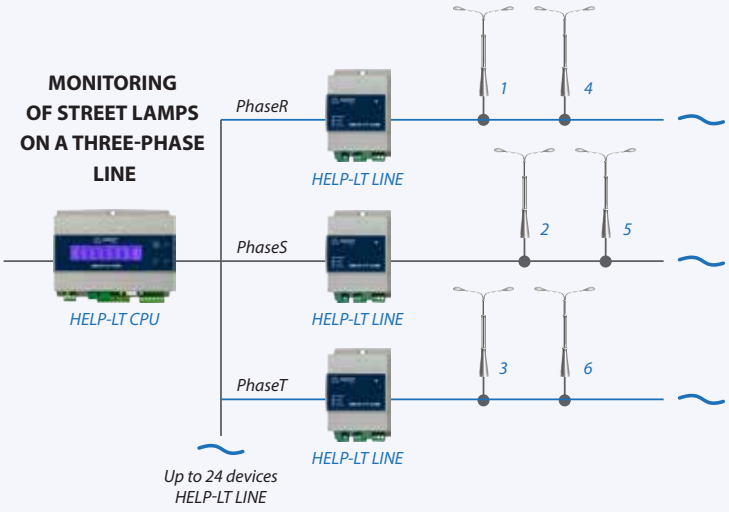

**TABLE OF MEASURABLE VALUES ON EACH PHASE:**

- VRMS
- IRMS
- VA
- Watt
- Power Factor
- Resistance (OHM)
- Capacity (MF)

## HELP-LT

Example of monitoring on lighting lines
connected on a three-phase line.

*Customizable solution*

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# Functionality and advantages

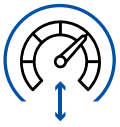
## Measuring energy efficiency

Knowing the absorption on the line allows you to:

- **check efficiency**, signalling Cos-phi values lower than the nominal ones
- **keep the connected loads under control**
- **report anomalous absorptions** other than the stored value

## Reporting damaged loads

**By correlating the energy absorbed by the line with the number of loads present**, in the event of a fault or cut of the line itself, an alarm is received and the **exact number of non-functioning loads is known.**



## Measuring the line resistance

In the absence of voltage, the resistance of the line up to 100 ohm can be measured, with a resolution of 0.1 ohm, with the following advantages:

- checking the **presence of heating devices**
- checking the **presence of the transformer primary**
- **receiving an alarm** in case of values different from those stored

## Measuring line degradation

- in the absence of voltage, it is possible to measure the **resistance between Neutral and Earth** up to 100 ohm, receiving an **alarm if the value read** is higher than the set guard value
- measuring the **insulation resistance between Phase and Earth** (only in the absence of resistive loads on the line) and giving an alarm signal if the value read is lower than the set value

## Measuring the line capacity

**Measuring the line capacity** up to approximately 6500 uF. Checking for the **presence of capacitive loads** (for example the power factor correction capacitors of fluorescent lamps) and sending an alarm if the value read deviates from the stored one.

## Identifying the cut point

Thanks to the measurement of the capacity detected during installation with the number of loads, it is possible, even in the event of attempted theft with **partial cutting of the line**, to understand approximately **where the break-in took place**.

## Monitoring in the absence of power

If there are no resistive or capacitive loads in the line (for example in lines with LED lighting), it can be **monitored even in the absence of power**.

| | HELP-LT-CPU | HELP-LT-LINE |
|---|---|---|
| POWER SUPPLY | 85..265 Vac 50/60Hz | 85..265 Vac 50/60Hz |
| NOMINAL ABSORPTION | < 2w | < 3w |
| ISOLATION VOLTAGE TOWARDS THE INPUT | - | 4250Vpk for 60s |
| PROPRIETARY CONNECTION | - | 1 for LCD-AM08 type external Display (code 13064.2013.0) |
| DISPLAY | 192x32 monochrome graphic LCD DISPLAY (32 characters on 4 lines) blue backlight. | - |
| BUTTONS | 4 programming buttons | - |
| CLOCK/CALENDAR | Ultracap pad | |
| MEMORY | 512Kbyte E2prom for various memorisations (for example Alarm History) | - |
| HISTORY | last 256 messages | - |
| PORTS | 1 RS485 local Bus for control of up to 24 HELP-LT-LINE devices<br>1 RS232 and RS485 ModBus slave for remote management and SW updates | 1 Bus RS485 slave with ModBus protocol for connection to HELP-LT-CPU. |
| GSM/GPRS MODEM | with external port for Micro SIM for sending status and alarm SMS* | - |
| SDCARD CONNECTOR | for software updates | - |
| RELAY OUTPUTS | 1 with NO/NC contact max. 5A (general alarm signalling - R1)<br>2 with NO/NC contact max. 5A (customized functions) | 1 with NO/NC contacts (for local alarm signalling) |
| INPUTS | 4 analogical at 12bit 0..5v (customized functions) | 1 Analog input for toroidal CT for AC current reading up to 32A<br>1 Opto-isolated analog input for live and voltage-free line measurement:<br>**with Live line:**<br>• RMS voltage up to 400 Vac +/-5%.<br>• RMS current up to 32A +/-5%.<br>• Active power (watt) and apparent power (VA) up to 13Kw.<br>• Power Factor<br>**with voltage-free line:**<br>• Resistance between Phase and Neutral up to 150 ohm precision +/- 5% full scale<br>• Resistance between Neutral and Earth up to 150 ohm precision +/-5% full scale<br>• Insulation resistance between Phase |
| ETHERNET | 1 RJ45 10/100 Mbit port (custom functions) | - |
| OPERATING TEMPERATURE | -20C° + 60C° | -20C° + 60C° |
| WEIGHT | 380 g | 223 g |
| RAIL CONTAINER | DIN 8U | DIN 4U |
| DIMENSIONS (L X H X D) | 142 x 115x 62 mm | 71 x 115x 62 mm |

* A Micro SIM with SMS traffic is required (preferably the FLAT type and non-rechargeable). You don't need a SIM with Internet traffic.

XENIT
by ATEX

MADE IN ITALY

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