HELP

ANTITHEFT FOR DC CABLES

HELP-AC

ANTITHEFT FOR AC CABLES

Patented anti-theft for copper and aluminium cables

- **Protects electrified lines LV**
  AC Mono, AC Three phase, DC Lines
- **Alarms manholes** of cable pipelines and accesses of technical rooms
- **No electrical contact**

HELP ANTITHEFT FOR DC CABLES HELP-AC ANTITHEFT FOR AC CABLES

Patented anti-theft for copper and aluminium cables

HELP and **HELP AC** are the **anti-theft** for the protection of electrified AC lines or not yet connected. Compatible with any type of conductor: copper, aluminium, etc. Its features make it a highly innovative tool, to counter effectively this serious problem. Its unique patented system protects lines with no electrical contact. It also allows you to alarm the manholes of cable pipelines or accesses of technical rooms. The extraordinary quality/price ratio makes it an indispensable prevention tool.

It protects all electrical systems where large amounts of copper are concentrates

Photovoltaic systems

Pumps and pumping stations power supply

Tunnels

Railway lines

Streetlights

Highways

How it works

Each **HELP** - **HELP AC** device offers total protection, because it has 2 dedicated lines to alarm the wells of manholes of cable pipelines and/or accesses of technical rooms, in addition to the direct and separate protection of 4 wire pairs.

The protection is at two levels: accesses and copper cables that makes this system highly effective.
Taking advantage of an innovative patented system, it checks the cables by electromagnetic induction. In the case there is only one conductor is disconnected or truncated, if there is a length change by means of a bridge or HELP AC device is tampered, the system detects a difference between the control signal and the value stored in the calibration phase, instantly generates the alarm and alerts the control personnel or the Police.

Easy installation

Just a few minutes needed to install the device, insert the wires to be protected into the sensors, and, if necessary, alarm the manholes of cable pipelines or other accesses.

High level of security

There is no electrical contact between the sensors and cables to be protected. The device has an insulation of 4kV compared to the cables.

How the alarm communicates

HELP - **HELP AC** has an RS485 port with ModBus communication protocol, for remote monitoring; is also available a relay with changeover contact, programmable in its functionality and timing. You can monitor the system remotely through a monitoring software that is able to e-mail alarm status, from a virtually unlimited HELP-AC devices.

Autocalibration

HELP - **HELP AC** to fit the length and characteristics of the cables, which varies from system to system, performs an auto-calibration procedure during the installation phase in order to adjust power and frequency of the energy pulse of each individual channel.

Properties of the cables to be protected

HELP - **HELP AC** protects any power line, up to a maximum resistance of 100 ohms. The resistance is related to the characteristics and to the length of the cable (not wrapped). Some examples: a pair of cables FG7R/FG7OR with nominal section of 2.5 mm2 has a resistance of about 16 ohms per kilometre, so we can control them for about 6 km in an ideal condition, which could be reduced due to line losses because of the connected loads. Obviously more cross-section increases, more it diminishes the resistance. Then taking into account the maximum section controllable with standard sensors, namely 300 mm2, this pair of cables will have a resistance of about 0.065 ohms per kilometre, therefore, the controllable distance increases exponentially.

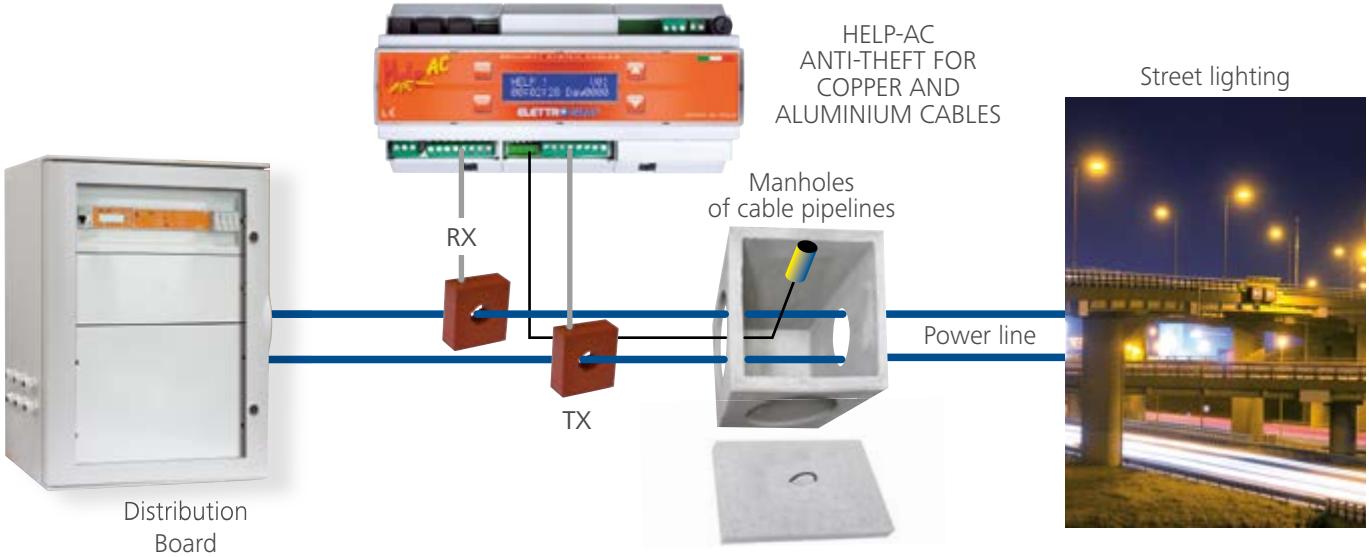
Adaptable to different types of systems

HELP - **HELP AC** is a versatile system, thus it adapts to different types of use. Providing us with the characteristics of the routes to be protected, we will develop the optimum configuration. In case of nonstandard applications, we develop ad hoc versions, designed on specific customer request.

HELP-AC ANTITHEFT FOR AC CABLES

Protects electrified lines LV
AC Mono, AC Three phase, DC Lines

Usage example: every HELP AC unit protects up to 4 pairs of cables separately and alarms the manholes of cable pipelines and accesses of technical rooms.



HELP
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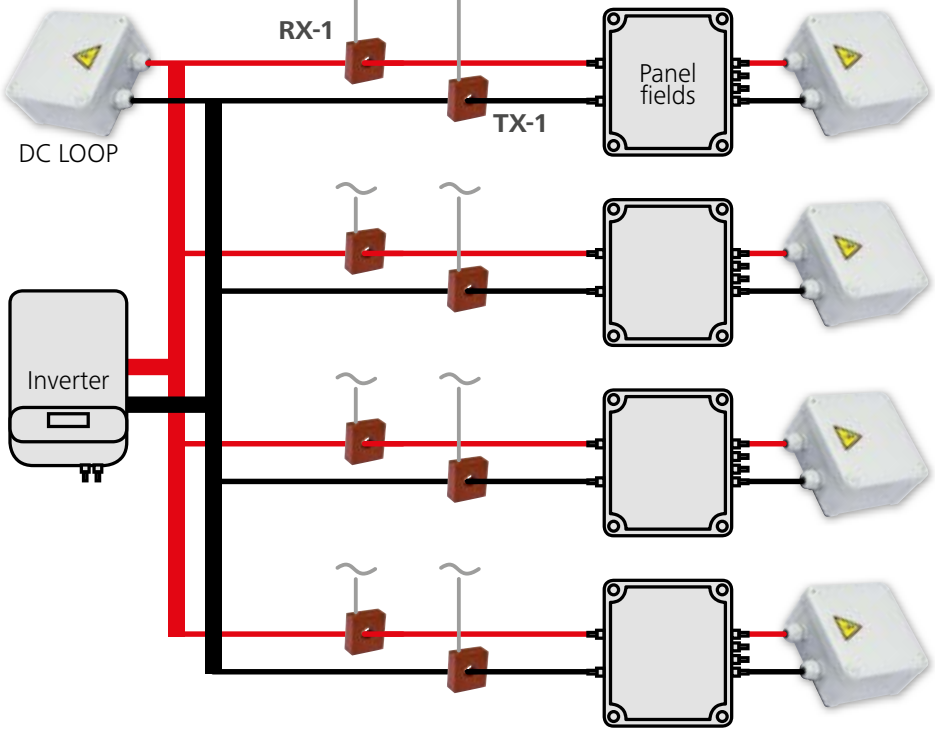
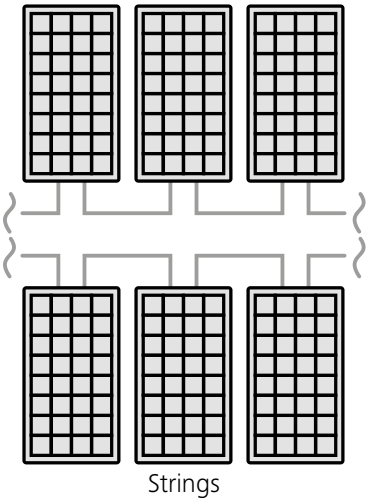
Total protection for Photovoltaic Plants

It protects the cables of concentration trunk of field panels, alarms manholes of cable pipelines and accesses to technical rooms

HELP indicates any opening attempts of the manholes or other access to cable pipelines and simultaneously controls the presence of the cables 2 ways: during the day measures the current flow generated by the photovoltaic modules; during the night it generates a series of pulses on the cables and through **TAHELP-TX** device the energy is transferred by electromagnetic induction to the cable arriving to the field panel where **DC LOOP** device is located that closes the circuit, the impulse retraces the cable back up to **TAHELP-RX** device. Here, still by electromagnetic induction, it is transformed into current pulse and detected by **HELP** which measures it and compares the values with those stored during the installation phase. In case **DC LOOP** device is removed or short circuited, or even just one of the two trunk cables is cut off, or if the length is altered by a bridge, **HELP** detects a difference between the control signal and the value stored during the calibration phase and the alarm is generated.





Main technical characteristics of HELP device (cod. AF1.HELP) HELP-AC (cod. AF1.HELP-AC)	
Power supply 230V	230V
Absorption	Max 5W in normal operation and 12W in calibration
4 control channels	composed by 4 output sensors TAHELP-TX and 4 inputs sensors TAHELP-RX
Insulation voltage	4kV between TAHELP-TX , TAHELP-RX and trunk cable
Display	Backlight 16x2 LCD with possibility of a second remotable external display
Relay output	With NC and NA contacts capacity 1A, normally powered in the absence of alarms
RS485 port	Opto isolated, with MODBUS-RTU SLAVE for remote supervision
Inputs / outputs	2 analogical/digital 0-10V, Buzzer
Alarm reset	Automatic, programmable to preset intervals
Operating temperature	-20° + 70°
Dimensions mm	62-110-213 (H x W x L)

Technical features of the transmitter device TAHELP-TX (cod.AF1.TAHELP-TX) and receiver TAHELP-RX (cod.AF1.TAHELP-RX)	
Container Type	Self-extinguishing plastic UL94-HB
Dimensions mm	76-30-70 (H x W x L)
Cable type	FG7OR/4
Cable length	Mt.1,90 extendable to Mt 10
Hole Diameter	Standard 26 mm suitable for cable cross sections up to 150 mm2 Special versions for cable up to 300 mm2
Protection grade	IP65
Operating temperature	-20° + 85°
Insulation voltage	4kV, tests performed on 100% of production, according to EN 60742, EN 60950

Technical characteristics of the circuit closing device ACLOOP (cod.AF1.ACLOOP)	
Capacitor	10 uF 5% 475Vac

Technical characteristics of the circuit closing device DC LOOP (cod.AF1.DCLOOP)	
Protection	Fusible 1000VDC 10A gL
Connection type	Multicontact or other on request
Cable type	Solar cable 4mmq
Cable length	90cm
Dimensions mm	105x105x55 (H x P x L)
Protection grade	IP55
Operating	temperature -55°+85°
Max. operating voltage	1100VDC

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In accordance with 2004/108/CEE directive
and CEI EN 61000-6-3 2007-11;
CEI EN 61000-6-1 2007-10 regulations

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