Problem
The copper thefts are increasing exponentially, so much so that the Ministry of the Interior established the National Observatory on copper thefts at the Department of Public Security, the central management of the Criminal Police. Just type “Theft of Copper” on any search engine, to run into an endless list of articles documenting every day raids of this metal, also known as “red gold”.

Solution
HELP AC is the 1st anti-theft in the world 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:

- Highways and tunnels
- Streetlights
- Telecommunications networks
- Railway lines
- Renewable sources
- Photovoltaic systems
- Industrial sites
- Water network purifiers
- Pumps and pumping stations power supply
How it works: Each 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.

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.

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 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 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 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 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 non-standard applications, we develop ad hoc versions, designed on specific customer request.