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(54) **Anti-radio blinding module for antitheft systems**

(57) This project concerns an electronic radio frequency module, paired up with any kind of alarm system for the control of environments operated by radio waves; able to detect and neutralize the attempt of blinding the same alarm system by ill-intentioned people who want to elude surveillance systems placed for the safety of the surroundings.

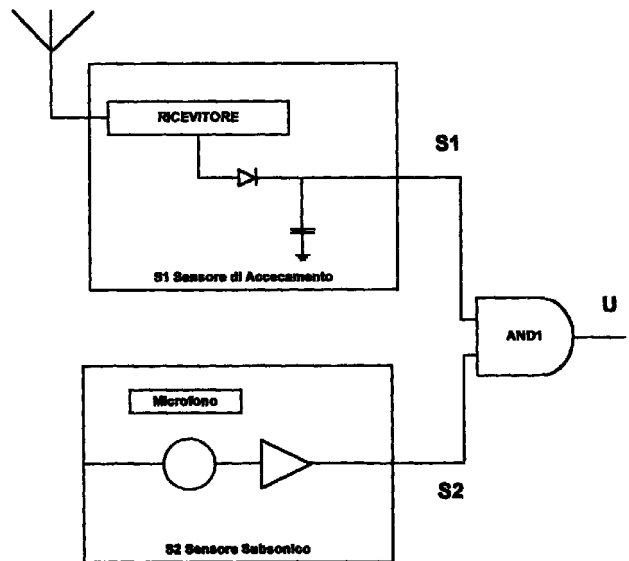


FIG. 1

Description

[0001] The subject of this patented invention is an electronic circuit, lodged in a pleasant and uncombersome container, which detects the activity of people who have the intention of excluding the function, by the improper use of trasmitters fixed on to the same working frequency of the alarm system and consequently neutralizing the regular working of the radio alarm systems which are on the commercial market today.

[0002] The systems of alarm for the control of the environment (alarm systems) are composed of a central control unit base connected to various accessories such as:- volumetric sensors, periphery contacts, self feeding sirens for the outside, telephone combinators etc.

[0003] In the traditional systems, or those that don't work on radio frequency, all the accessories that form part of the system are connected to the central unit base by multipolar wires. In this case, the installation of an alarm system requires:-

[0004] A survey on the adaption of the environment to the system (wires and cable passes already prefixed) or else brickwork, often difficult and expensive, is imposed on the buyer, who intends to install a similar system It is really the installation of alarm systems that often puts off the possible buyer to sign a contract giving up the benefit of having a safe environment.

[0005] The manufacturers have replied to this problem of installing the alarm system via wire by putting on the market an alarm system working on radio waves. Alarm systems via radio, called alarm systems without wires, possess all the functions of the old systems via wire having, though, a link-up between the central unit base and the periphery guaranteed by elettromagnetic wave comunication, more precisely by coded radio waves.

[0006] To obtain this, the central unit base has a radio receiver installed which is able to detect the discharge of coded hertzian signals which arrive from the various peripheries (volumetric indicators, external and pressure indicators etc) installed in the strategic points of the environment controlling the security and safety of the same.

[0007] All the peripherals have a transmitter lodged which becomes charged every time the sensor itself detects a breaking-in. The radio transmission between the periphery and the central unit base is coded. Very often in the central unit base one also finds a transmitter which transfers, in the case of alarm, a warning signal towards the outside such as:- telephone combinators and acustic sirens. All the radio waved accessories are fed by their own gapstop battery which guarantees a long working period, supplying excellent security.

[0008] The type of the radio waved system and its consequent reliability depends greatly on who constructs it.

[0009] Irrespective of the purchase value, .every system must offer similar basic characteristics whatever

the grade of quality each has; all products must guarantee the same range of basic functions. A common condition, according to the standardization of the product on a european level, is the working frequence. The european regulations reserve for alarm systems, a very precise working frequence established at 433,92 Mhz. By the way, the systems must conform to ETS 300.220 in order to be put on the market.

[0010] Unfortunatly, however, the previous knowledge of the central band frequence, allows the possibility to neutralize the alarm systems. When an alarm system isn't able to discriminate the alarm signals which come from the single control devices any more, one says that the system is "blinded".

[0011] The tecnique of blinding is extremely simple, and in fact, this can be done by activating any kind of working telecommand to the same working frequence of the alarm which it intends to repress.

[0012] In these circumstances, if we enter into a room where a radio waved alarm system is placed to watch over the environment, the receiver with a radio frequency of the central unit base will be blinded by the signal of the inhibitory radiocommand, jeopardizing the reception of the alarm codes sent by the sensors or by the radio contacts. On the commercial market, there are different types of central unit bases available which have a supporting detector capable of intercepting the attempts to blind. The blinding functions, realised up to date, are not very trustworthy because the attempt to blind is detected by the length of time of the intruder's signal. The discovery of a carrier sent out for a long time isn't, however, enough to detect, in an unmistakable way, an attempt of sabotage of the same system. In fact, it could happen that near the central unit for different reasons, due to other eventual types of application, a continuous carrier has been released. In this case the system of anti-sabotage would be alerted by mistake showing the unreliability of its function. The object of this novelty is to risolve efficiently the problem created by the blinding of the radio frequency, confirming the reliability of the alarm system.

[0013] Two sensors of different types, each having a specific mission, have been integrated into the electronic module, object of this invention:-

[0014] A radio frequency sensor destined to activate the logic part of the module, subject of this present patent, in the case of a long length of time of a carrier, among those included in a determined spectrum of frequency.

[0015] A subsonic sensor, fitted to activate the logic part of the module, in order to intercept a possible breaking-in, by means of the detection of an airflow caused by the intrusion of ill-intentioned people, in the surroundings covered by the system.

[0016] The electronic module supplied with the exit N.C.-N.O.-COM is connected, by a wire to whatever entrance there is for the activation of the alarm of a central unit base which operates an alarm installation

without wires. The alarm is only generated when the door of the module, realised in logic AND (doorAND1 in Fig. 1) is activated by both the sensors, radio (EXITS1 in Fig. 1) and subsonic (EXITS2 in Fig 1). The conditions for activating the alarm system, caused by the attempt of blinding are summarised as follows:- 5

- The module, subject of this invention, must verify simultaneously, in the environment protected by the radiowaved alarm system, both, that an extended radiofrequency signal is active (blinding) and, that an attempted intrusion is taking place (subsonic variation) and consequently the module will provoke the alarm system. It must be noted that if one of the two cases is verified, the surroundings are however always safe (the attempt of burglary which would on its own generate a subsonic wave, is protected by the alarm), whilst just the extended radio signal doesn't significate that there is an attack to damage the environment which is intended to be protected. 10
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[0017] Neither the intrusion on its own nor the reception of a long radiofrequency signal will give action to the module and consequently activate the alarm. 25

Claims

1. **Electronic module fitted to detect the attempt of blinding the alarm system for the environment control by radiowaves to which it is attached, as an integral part:** 30

- receiver sensor with long timed radio frequency, which is normally at a low level (0). passes to a high level(1) at the reception of the long timed radiofrequency and remains at a high level for a medium time regulated from two seconds to several minutes. 35
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- subsonic sensor for the detection of intrusors in the environment where the alarm is placed, such sensor which is normally at a low level (0), passes to a high level (1) on the receiving of a very low sound frequency, in the range of 1 Hertz or even less, provoked by the intrusion, as for example, the opening of a door or a window, and remains at level 1 for a medium time from two seconds to several minutes. 45
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When both the sensors are energizing, independently of the order of detection, there will be a change in the logic of the module, 0 passes to 1, consequently actioning the exit N.C.-N.O.-COM of the electronic module, subject of this invention, and so generating the alarm system to which it is joined. 55

The above module could, not only be connected to an existing central unit base but could, in respect to the claimed patent, become an integrated part of a new central unit project which would lodge the same module in the inside of its case.

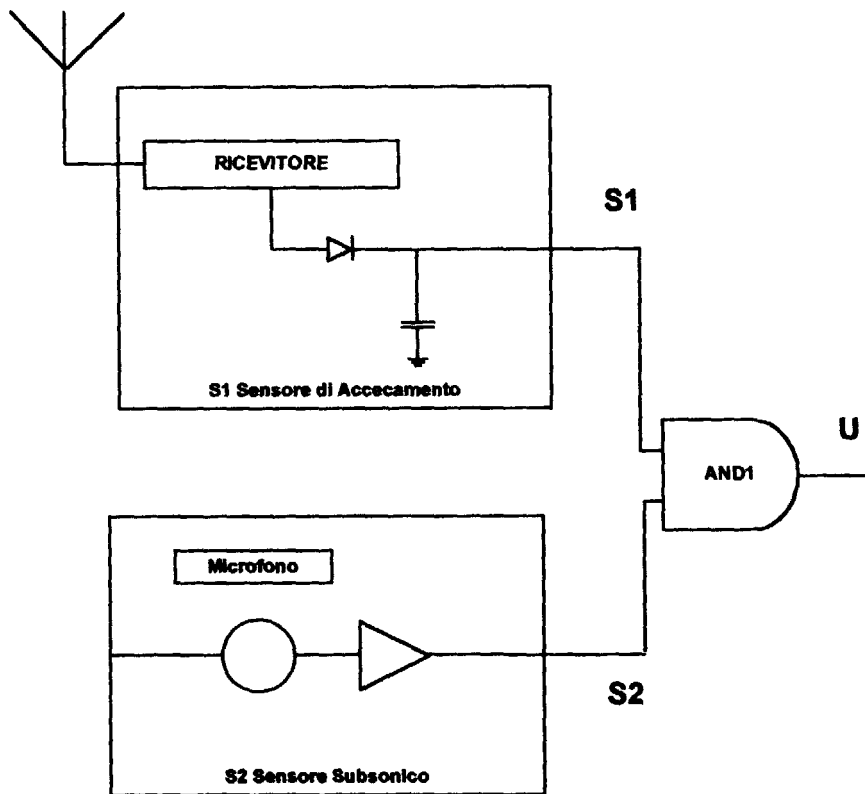


FIG. 1