

Perimeter Detection System

PERIDECT

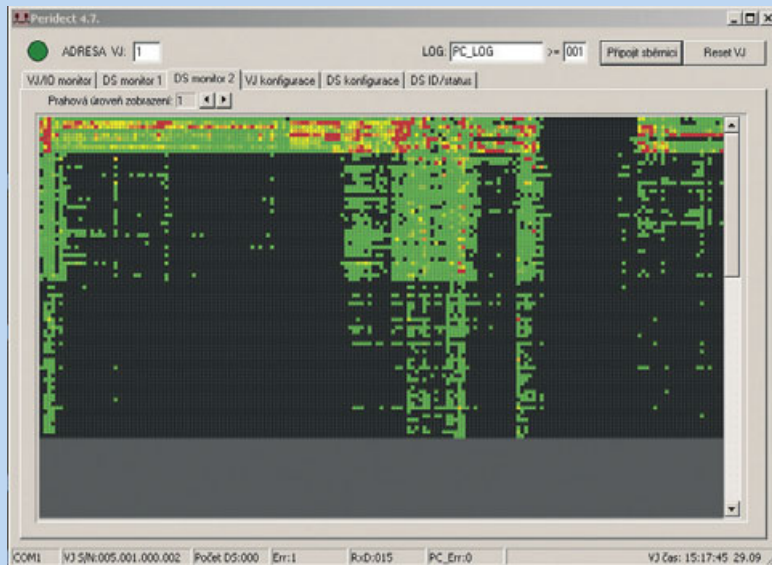


Perimeter Detection System PERIDECT



SIEZA®

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The perimeter detection system PERIDECT has been designed to protect fenced areas against unauthorised entry. The system is intended in particular for mounting on regular types of fencing, e.g. chain-link fences, welded mesh panels and superstructure fences on top of perimeter walls.

The perimeter system is certified for both, civil applications and for use by the Czech Army. It can be used for securing fenced areas up to ČSN EN 50131-1 Security level 4 – High Risk – and meets the requirements of the Environment Class IV – General Outdoor Environment. It has been verified and approved as technical equipment for the protection of classified areas up to the confidentiality level “Top Secret” by the Czech National Security Authority.

System Description

The PERIDECT system detects vibrations on the fencing caused mechanically during attempts to enter the premises (climbing over, cutting through, lifting off). Sensors are arranged on the fencing for such detection (usually one detector (PDS) per fence panel between posts). Each detector contains a piezoelectric element supported by microprocessor-based signal processing. Using a differential logic, the system considerably suppresses false alarms caused by weather effects (rain, wind). The system provides detection accuracy enabling each individual detection sensor PDS, to be viewed on the control system as one zone, while the parameters of any sensor can be set independently. One single evaluation unit (PVJ) can typically be used for approx. 600 m of fencing with resolution of unauthorised entry for each 2.5 m fence panel assuming one detector per panel.

The PERIDECT system is fully autonomous with fully configurable features and alarm outputs allowing the PERIDECT system to be connected to a standard security system as a regular detector. Its use within a system for integration of security and control systems, e.g. system SEVEN, provides ease of control and monitoring for its operating staff. The secured area can be displayed graphically with the status of individual components of installation.

The PERIDECT system is in addition equipped with an input/output module to simply connect other devices on the perimeter route (e.g. magnetic contacts on gates) into the system as well as controlling other devices (e.g. spotlights).

System Elements

The PERIDECT system consists of an evaluation unit (PVJ), to which detection sensors (PDS) and input/output modules (PIO), are connected using a data cable. Each PVJ can be connected to up to 246 detection sensors (PDS) and 8 input/output modules (PIO).

PVJ – Evaluation Unit

The evaluation unit is located in a plastic box with cable grommets. The unit is connected to individual detection sensors (PDS) and input/output modules (PIO) using a data cable (twin-wire bus-bar). The unit contains 10 programmable outputs. These can be connected to a conventional security panel with the result that activation from any groups of PDS's or the input status of any PIO module can be assigned to any output. The evaluation unit contains in addition eight double balanced inputs, which can be used for connection of other security system elements, e.g. PIR's, IR beams, MW detectors and contacts.

PDS – Detection Sensor

The detection sensor evaluates mechanical vibrations from the fencing using a piezoelectric sensor (ensuring long-term durability and repeatability). It is located in a plastic box and attached to the fencing by two screws and a plastic strap. It is fitted as standard in the middle of the fence panel between the post supports. The manufacturer connects individual sensors using a bus cable with spacing according to actual conditions that the installer must specify. It is recommended to fix these cables every 25 cm using cable ties, so that these cables cannot interfere with the fencing in windy weather conditions causing false alarms.

PIO – Input/output Module

Each input/output module has been designed to allow one input to be connected (e.g. contacts) into the system and for one output to be connected (e.g. switching on devices on the perimeter route). The input is double balanced and the output is an open collector type with galvanic separation. The module has its own address and can be connected anywhere to the data cable. For example this PIO module can monitor door opening on the secured route by connecting a magnetic contact. The output may for example switch on the lighting or a sounder remotely. In such case, it is however necessary to provide a local power supply for that device.

Configuration Program

Because of the broad functional range of the PERIDECT system, it is necessary to use a configuration program to set up the system. This program enables the set up of basic system parameters, e.g. number of PDS and PIO modules (including their addresses), sensitivity of individual sensors according to the fence type and their position, the function of programmable output links, and to download the system log of events from the evaluation unit PVJ. The system evaluates the alarm not only on the disturbance amplitude basis, but also according to the preset number of disturbances during a certain time period and the link to adjacent detection sensors. The configuration program also provides graphic display of the disturbance volume of individual sensors in time. The first monitoring window displays the amplitude of six sensors simultaneously. The second type of monitoring window displays all sensors at the same time, while the disturbance amplitude is colour-coded.

For increased ease of device identification within the system, each detection sensor is assigned an identification number (address) from 1 to 246. Also the input/output unit uses special addresses from 247 to 254 entered using the configuration program.

Site Visualization Program

In order to monitor the system status and intrusion into the monitored area, it is efficient to use a visualisation (graphic map) program, where alarm or failure states are displayed in graphics and text on background section plans and this way their locations are easily identified. The number of maps or plans is unlimited. Vector outputs from CAD applications are beneficial if used as background data for the preview. Also photographs or raster pictures of the monitored object can be used. The visualisation program SEVEN designed only for connection to the PERIDECT system can be purchased separately at a lower cost than standard SEVEN system.

A driver is also available to connect to the full SEVEN system version. Thanks to its script language, the system SEVEN enables integration of security and control systems plus monitoring and control of building technologies. It can even work with the data of otherwise heterogeneous technologies and pass the results of logic links on other subsystems. Interconnection of the system SEVEN with a web server enables display of graphic or text information directly on Internet browsers of the client network.

PERIDECT System Advantages

- easy assembly and service
- long working life (no moving elements)
- independent setting-up for each detection sensor
- accurate detection of intrusion locations (in individual fence areas)
- simple connection to ordinary security panels
- optional connection from other security elements to the evaluation unit on the perimeter route
- option control other devices on the perimeter route
- each evaluation unit can secure fencing typically up to 600 m in length
- suitable for integration with camera systems
- configuration program for easy system set-up
- visualisation program (site graphics) for added value & efficiency

Integration of System PERIDECT

