PSF SERIES CONTROLLER

Overview

The PSF controllers are engineered as high-tech perimeter security system component that combine strong protective performance with advanced safety design. Developed for reliability, they operate within internationally recognized electrical-safety standards, ensuring safe and stable electrified fence operation in demanding environments.

Each controller integrates seamlessly with third-party systems, supporting direct communication with alarm panels, access-control systems, and CCTV. This open-architecture approach enables flexible deployment and smooth integration into existing infrastructures.

The controllers are available in single, dual, and six-zone configurations, in both standard and high-security formats. Each unit is housed in an IP65-rated enclosure for both indoor and outdoor installations.

The controllers feature voltage free alarm outputs and a simple 12V control input for switching the energizer on and off. All the interconnecting cable from the controller to the alarm monitoring equipment are fully supervised. All controllers can be powered from 15-24 VDC or 110/230 VAC. A fully supervised isolation switch is fitted to the energizer.

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Key Features

➢ Supports 15–24 VDC or 110/230 VAC power options

➢ Dual-zone or multi-zone intelligent energizer/controller

➢ Generates HV pulses, processes intrusion events, and communicates alarms

➢ 8 alarm inputs + 8 alarm outputs (dry contact) for local integration

➢ Built-in surge protection and status indicators

Monitoring Features

➢ **Shock monitoring**

When a pre-set number of shocks have been administered to a would be intruder an alarm is generated.
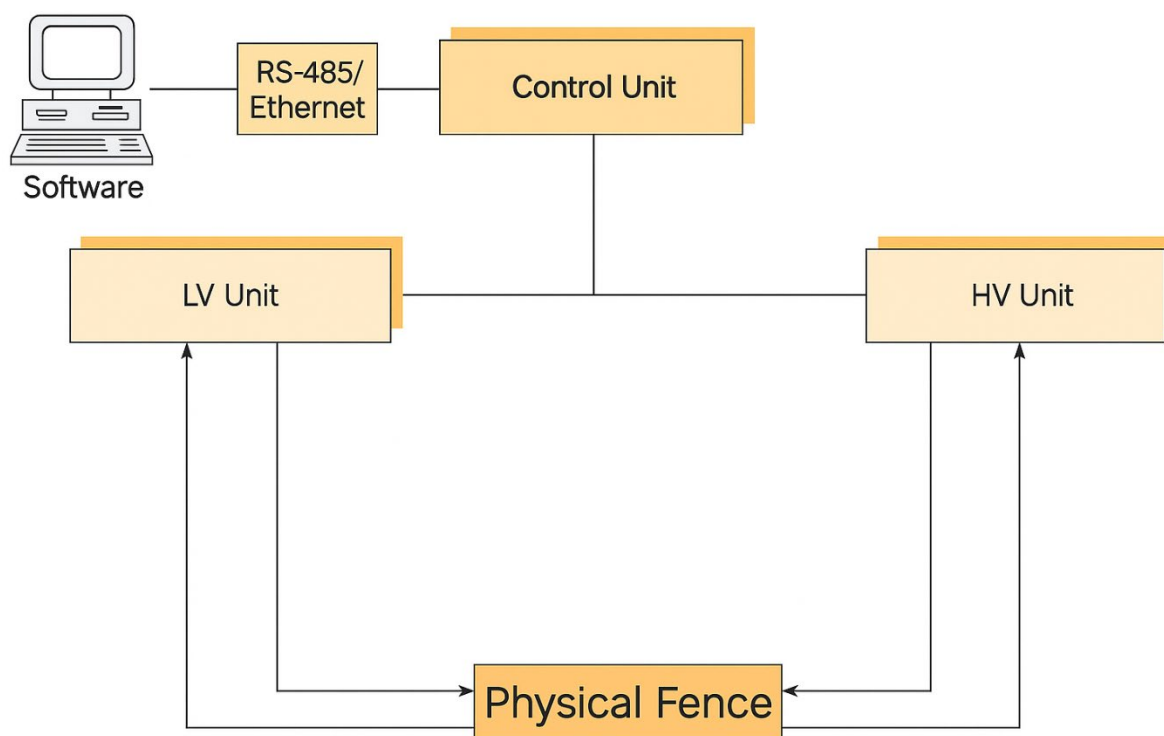
➢ **Voltage Monitoring**

If an intruder attempts to reduce the fence voltage an alarm is generated.
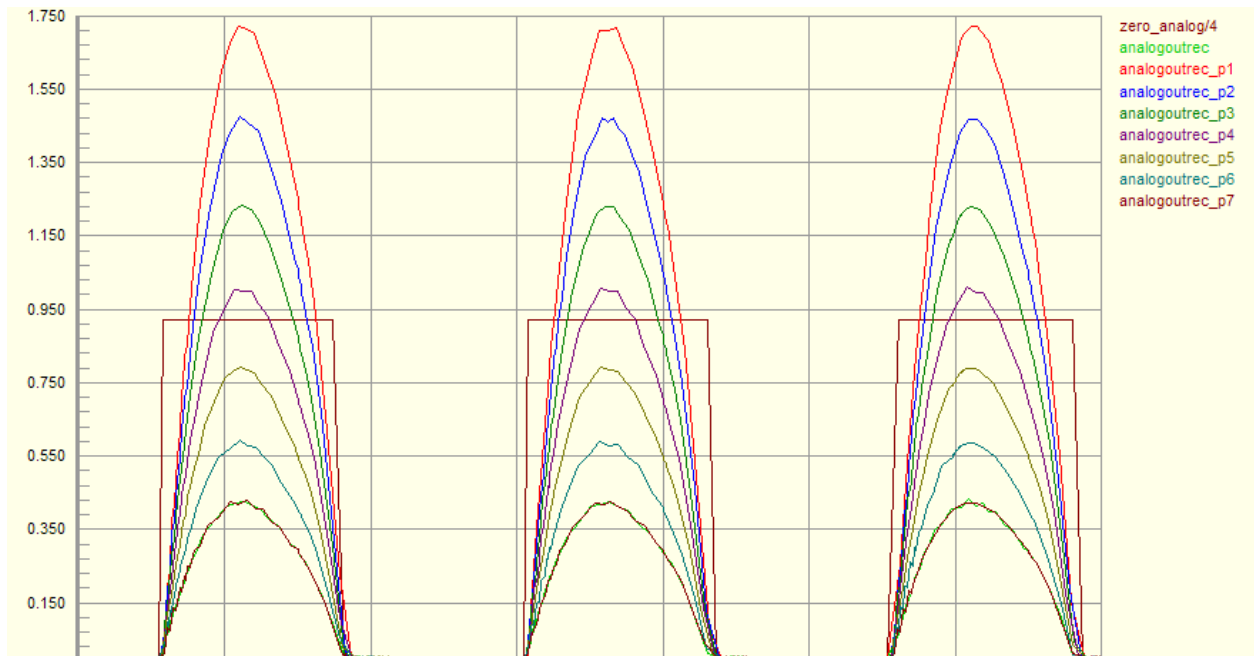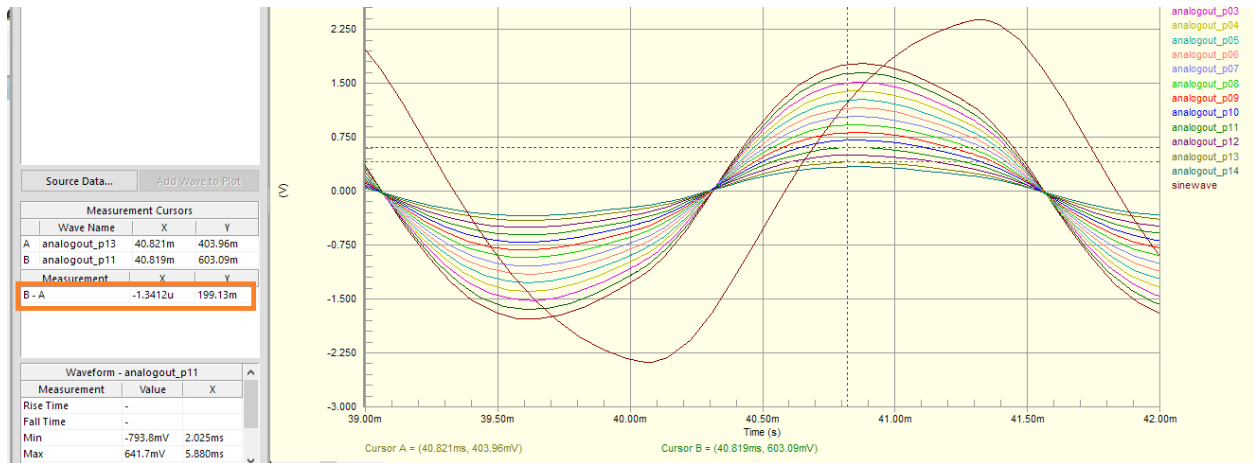
➢ **Cut monitoring**

If an intruder attempts to cut the wires an alarm is generated.

Block Diagrams and System Components

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Signal Simulation

Simulation of signals applied to a zone and analysis of their input to the processor of PSF Controller
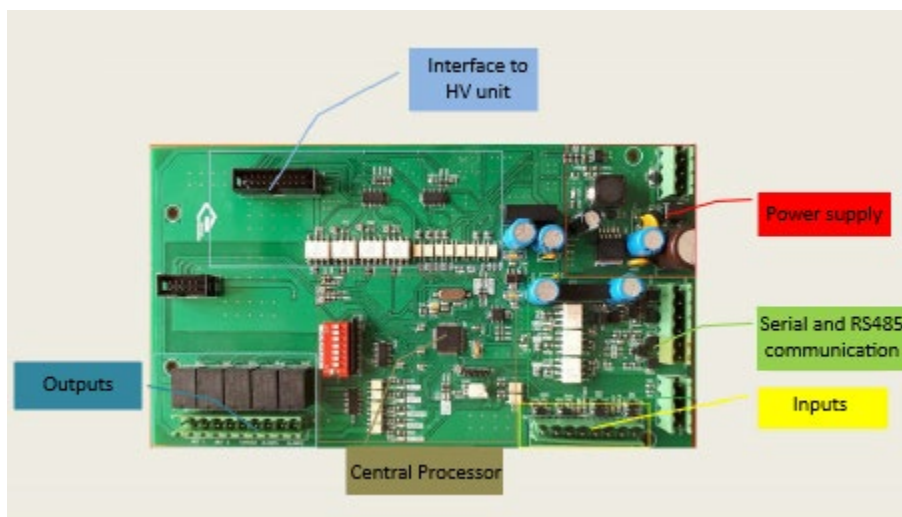
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Product Design Specifications

➤ Control Unit

The network-based controller section consists of a multi-core processor with a Linux kernel, internal memory, and dedicated firmware for the independent management of the smart perimeter-security fence system. It communicates serially - via the Modbus protocol in both serial and network formats- with the control section of the smart-fence processor and has two main functions:

1. Serving as the network interface for the smart-fence processor with the management software.

2. Providing additional communication ports, as needed, to enable the system's connectivity with I/O devices, transmit their data to the management software, and manage them through the controller.
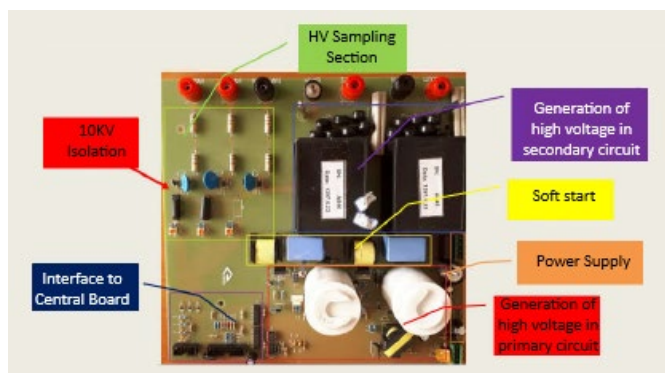
This section contains firmware in which all central-software configurations and commands are stored, and in case of need or loss of communication with the central unit, it independently manages the smart fence processor and any other systems connected to it.
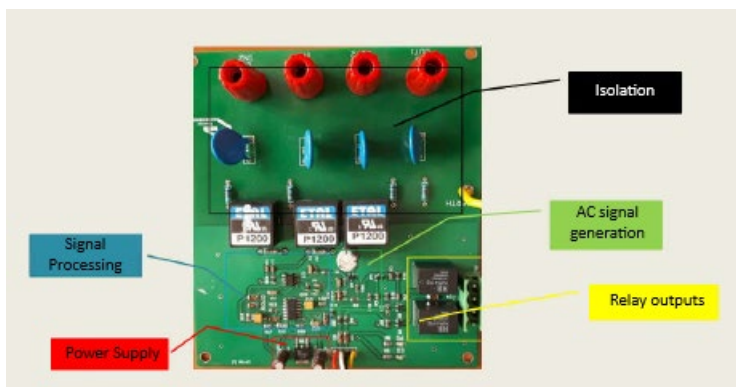
➢ HV Unit

The HV unit consists of the frequency-generation part that is used to drive the step-up transformers, the transformers themselves, and the primary high-voltage booster controller.

It also includes the primary high-voltage generator with its protective elements, the secondary high-voltage generator up with voltage, current, and frequency protection circuits, the capacitor-discharge section, multiple voltage and current modules for precise regulation of voltage under the control of the central processor, a module for returning high-voltage signals to the main circuit with protective components, and finally the section to transfer the analog voltage to the control unit.

➢ LV Unit

The LV unit consists of an ARM microprocessor, a controllable switching power supply, battery charging section, isolation between the communication interface and the power circuit, isolated inputs and outputs, an isolated relay-output interface, and isolated analog input and output channels. The microprocessor firmware supports RS-232, RS-485, and TTL communication, and incorporates artificial-intelligence algorithms and intelligent data storage for learning and advanced processing of the signals received from the fence.

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Technical Data

Number of zones	2, 4, 6 … up to 50
Maximum output voltage	up to 10 kV (adjustable)
Voltage alarm threshold	100 V – 10 kV (variable)
Output energy	up to 2.5 Joules
Network	RS-485, TCP/IP
Alarm outputs	Normally Closed dry contact + TCP/IP events
Maximum Power	Joules 2.5
Power Supply Enclosure	24V DC @ 300mA or 110/230V AC @ 10-15 watt 500x400x150mm
Enclosure IP rating	IP65 (IP66, IP67, IP68 optional at order)

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