

PowerFence™ Trophy FT Fence Controller

The PowerFence™ Trophy FT Fence Controller is a key component to support the high level integration of PowerFence™ perimeter security with the Cardax FT security system.



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PowerFence Trophy FT Fence Controller

PowerFence™ Trophy FT Fence Controllers actively deter and detect intruder attempts on the PowerFence™ perimeter fence. They monitor and control perimeter security by sending regulated non-lethal electrical pulses around high voltage Fence Zones, sections of the PowerFence™ perimeter fence.

Configuration Options

PowerFence™ Trophy FT Fence Controllers are supported in Cardax FT Command Centre, the server software of the Cardax FT security system. The following properties can be configured for each PowerFence™ Trophy FT Fence Controller:

- Pulse interval ranging from 1.0 to 10.0 seconds
- Power level ranging from 10% to 100%
- Authorization source to synchronize the electric pulse of the PowerFence™ Trophy FT Fence Controller with other electric fences in close proximity
- 'Go Slow' settings which define the power level and pulse rate in the event of either an AC power outage

or if the battery output is below a pre-set threshold; in either event triggering a warning

- 'Stop battery' level which defines the backup battery voltage level at which the electric pulse will be switched off and alarms raised.

Fence Zones

A Fence Zone is a section of the PowerFence™ perimeter fence (up to 300m/984ft length) which is assigned to a PowerFence™ Trophy FT Fence Controller in Cardax FT Command Centre. Up to three Fence Zones can be configured per PowerFence™ Trophy FT Fence Controller.

The PowerFence™ Trophy FT Fence Controller sends regulated electrical pulses around the Fence Zone. The status of each Fence Zone is monitored by the PowerFence™ Trophy FT Fence Controller.

Fence Zones are linked to Cardax FT Alarm Zones for raising and processing warnings and alerts that occur in the Fence Zone.

Warnings and Alerts

Warnings and Alerts are typically configured for Low and High Voltage and Pulse Count.

- A warning is generated when the Voltage level falls below a threshold, typically 5kV, indicating that maintenance is required. For example, vegetation growth loading the fence.
- An Alert occurs at a lower Voltage threshold than a warning and is higher priority. It is indicative of an attack requiring urgent attention. For example, an attacker cutting the fence.

Differentiating warnings from alerts helps sites to determine the appropriate response and prevent unnecessary security response callouts.

Intruder Detection

When the electrical pulses are sent around the perimeter fence, the PowerFence™ Trophy FT Controller monitors the returning pulses. Any attempt to disable the fence, whether climbing, cutting or tampering with the fence, will be detected.

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High Voltage Zone Separation

If an intruder attacks a Fence Zone the performance of the remaining zones will not be affected. Therefore, if the intruder causes an alarm and enters the site, they cannot easily escape through another zone, as the remaining zones will continue to be armed with the full deterrent.

Pulse Synchronization

The pulse synchronization enables the PowerFence™ perimeter fence to be integrated with other fences in close proximity. This ensures that the system operates within standards for pulse frequency through synchronizing pulses with adjoining fences.

Event Log

All events relating to PowerFence™ Trophy FT Fence Controllers and Fence Zones, including voltage logging, are date/time stamped and logged in Cardax FT via the Cardax FT Controller (3000 or 5000GL) .

Events for voltage may be logged in response to a voltage change (e.g. when the fence voltage changes by more than

500V) and/or time interval (e.g. every hour). A comprehensive Voltage Report is available through Cardax FT Command Centre.

Inputs

The PowerFence™ Trophy FT Fence Controller has two 4-state balanced Inputs typically used for motion sensors or key switches.

The four states monitored are:

- Open
- Closed
- Short Circuit (Tamper)
- Open Circuit (Tamper)

Inputs can be configured for use anywhere in the Cardax FT system.

End of Line Resistors

For ease of installation and configuration, typical wiring and resistance values used on Inputs that are connected to the PowerFence™ Trophy FT Fence Controllers are defined in Cardax FT Command Centre.

Outputs

The PowerFence™ Trophy FT Fence Controller has two relay outputs typically used for alarm outputs such as sirens.

The PowerFence™ Trophy Output Board is available to provide an additional 4 relay outputs. An auxiliary DC output of up to 1A is available to power any relay outputs. Outputs can be configured for use anywhere in the Cardax FT system.

Communications and Connectivity

PowerFence™ Trophy FT Fence Controllers connect to the GBUS port on Cardax FT Controllers 3000 and 5000GL. They communicate via asynchronous RS485.

Up to 16 PowerFence™ Trophy FT Fence Controllers are supported by each GBUS port.

Data Security

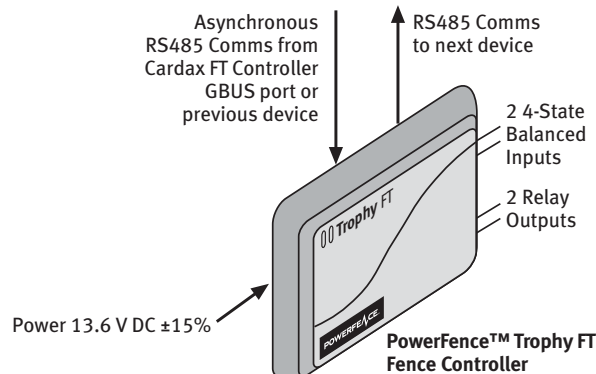
The PowerFence™ Trophy FT Fence Controller communications between the Cardax FT Controller (3000 or 5000GL) and the PowerFence™ Trophy FT Fence Controller are secured using 40 bit AES encryption.

Monitored Status

The communications status between the Cardax FT Controller (3000 or 5000GL) and the PowerFence™ Trophy FT Fence Controller is monitored via polling.

Connectivity Diagram

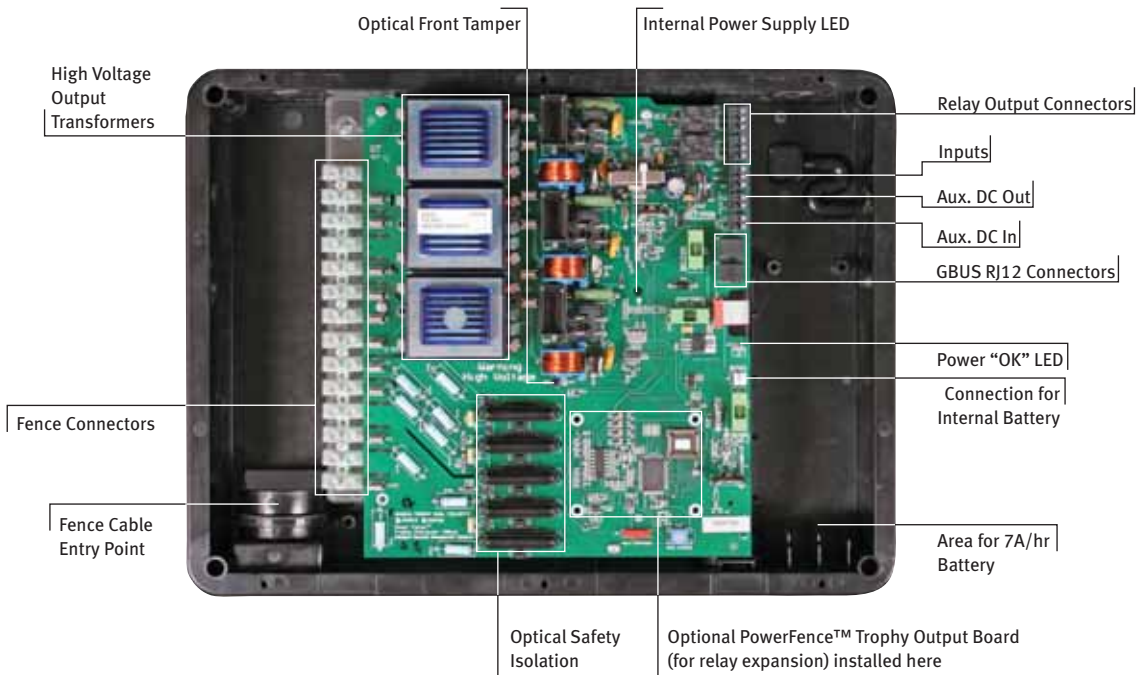
PowerFence™ Trophy FT Keypad connecting to a Cardax FT Controller 3000 or 5000GL



PowerFence™ Trophy FT Fence Controller

Key features of the PowerFence™ Trophy FT Fence Controller

- The High Voltage Zone Separation ensures that if an intruder attacks one zone of the fence, the performance of the remaining zones is not affected
- Through monitoring the voltage, the PowerFence™ Trophy FT Fence Controller detects if the earth system is compromised and will raise the appropriate alarm
- The pulse synchronization feature enables the PowerFence™ Trophy FT Fence Controller to be integrated with other electric fences in close proximity
- Smart battery back up maintains site security if AC power fails



If the PowerFence™ Trophy FT Fence Controller stops communicating an alarm will be raised at the Cardax FT Command Centre.

High Performance Housing

The housing of the PowerFence™ Trophy FT Fence Controller is purposely designed to accommodate an internal battery back up and support tidy cable management. It is weather resistant to IPX4.

Tamper Protection

Optical tamper protection is provided for the front of the PowerFence™ Trophy FT Fence Controller. An alarm will be raised in the event the cover is removed.

Smart Battery Back Up

Gallagher Security Management Systems recommends the internal

installation of a back up battery in all PowerFence™ Trophy FT Fence Controllers. This will typically provide back up power for 8 hours under default settings with the system fully armed. This can be extended further through additional external back up batteries as required.

In the event of AC power failure the system will automatically switch over to the back up battery. While being powered by the battery, the system will monitor the duration of the power failure and the condition of the battery. The internal battery will be charged automatically on resumption of AC power.

As the battery voltage drops the system reduces the power consumption of the total PowerFence™ perimeter system in

order to increase the battery life, while still maintaining site security ('Go Slow' settings). If the battery voltage drops below the minimum threshold, an alarm will activate.

Optional PowerFence™ Fence Integrity Monitor

The PowerFence™ Fence Integrity Monitor is a single zone alarm detector that can operate on the PowerFence™ perimeter fence. An optional product for PowerFence™ Trophy FT systems, it enables the detection of fence damage without the deterrent feature of the active, high voltage electric pulse.

For more information, please refer to the PowerFence™ Fence Integrity Monitor data sheet or contact Gallagher Security Management Systems.

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TECHNICAL SPECIFICATIONS

PowerFence™ Trophy FT Fence Controller

Power Supply Voltage 90-265V AC, 50-60Hz

Power Consumption 40W

Aux. DC Output 12-15V 1A (re-settable fuse)

Inputs 4-State balanced inputs 2
Default: using dual 4k7 ohm termination resistors, configurable

Relay Outputs Dry contact relays 2, expandable to 6
Resistive load 3 Amps at 24V DC/AC
Inductive load 1 Amp at 24V DC/AC

Communications Between Cardax FT Controller GBUS port and PowerFence™ Trophy FT Fence Controller RS485 at 38.4 Kbits per second
Wiring format - data 2 wire (using Cat5)
Wiring format – power 2 wire (gauge selected to suit cable length)
Encryption Level 40 bit AES

Cable Specifications PowerFence™ Trophy FT Fence Controller to Cardax FT Controller 1200m (3937ft) max

Connector 2x RJ12 (allowing loop-through to additional GBUS devices)

Recommended number of PowerFence™ Trophy FT Fence Controllers per GBUS port on Cardax FT Controller (3000 or 5000GL) 8

Number of Fence Zones per PowerFence™ Trophy FT Fence Controller 3

Energizer 15 J stored at 100% power level
2.8 J output per zone independent of the loading of any other Fence Zones

Max HV channel loop resistance 300 Ohms*



* While the energy of this unit will allow this length - recommended 300m (984ft) - the classification of risk, the number of elevations in the fence and terrain must dictate the length of a zone for security evaluation.

Temperature Range -10 to +40°C (14-104°F)

Dimensions Height 390mm (15 1/4 “)
Width 490 mm (19 1/4 “)
Depth 125mm (5”)
Shipping Weight (Excluding battery) 5.5kg (12lb 2oz)

Environmental Protection Rating IPX4

Internal Back Up Battery Recommended for 8 hours coverage 7Ahr/12V DC

Compliance Standards C-Tick, CE - EN60335-2-76   ACN 002132943

System configuration, network capacities and the volume of system activity affect performance. Please contact Gallagher Security Management Systems for advice



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business partner



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