

Adaptive Thresholds



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Security

Increased flexibility of your perimeter security configuration

Rain, hail or shine, Gallagher's Monitored Pulse Fence (MPF) systems offer effective protection for your business. Gallagher's Monitored Pulse Fences are safe, reliable, and deter and detect disturbances without triggering false alarms, regardless of environmental conditions.

To help businesses operating in harsh environments, Gallagher has introduced an innovative new feature, Adaptive Thresholds, in Command Centre from version 8.40 onwards that allows your MPF system to adapt dynamically to environmental changes. Through the application of Adaptive Thresholds, sites can minimise false alarms while still ensuring unsurpassed sensitivity for a highly secure perimeter.

A monitored pulse fence provides an alarm when it detects a short or a cut to the energised fence circuit(s), which results in a loss of voltage below the set alarm threshold. By default, an alarm is only generated after three pulses where the voltage is consecutively below the alarm threshold.

Typically, the range between output voltage and the (default) alarm threshold is wide enough to account for changes in voltage from environmental factors, reducing the number of false alarms. However, some extremely harsh environments, where there are high levels of contamination and humidity, have the potential to generate swings in voltage outside of the threshold range - triggering a false alarm.

If we consider the use of MPF systems in correctional facilities, critical infrastructure, and other high-risk sites, it is crucial they are as sensitive as possible to tampering on the fence line to prevent and detect intrusions.

This is where Adaptive Thresholds can help.

What is Adaptive Thresholds?

Adaptive Thresholds is a feature in Command Centre that brings a new level of intelligence to the fence controller, providing increased reliability in extreme environments, and unsurpassed sensitivity to meet the needs of high security customers.

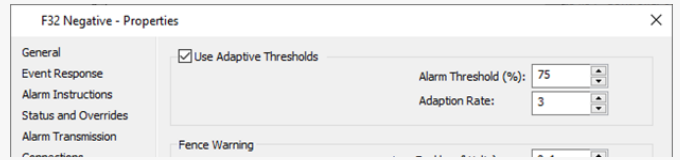
When there is an attack on the fence line, the drop in voltage is immediate, whereas environmental changes occur over a period of time, resulting in a gradual reduction in voltage.

Adaptive Thresholds is designed to seamlessly adapt to changing environmental conditions, which cause fluctuations in voltage on the fence line. Adaptive Thresholds allows you to change from a fixed alarm threshold to a dynamic threshold. Based on a percentage of return voltage, the alarm threshold sits at a much higher level (default is 75%), and trends with the changing voltage on the fence line due to environmental change.

Adaptive Thresholds helps you create a flexible and secure fence line that is more sensitive to an attack. In the event of an attack, previously the returned (measured) voltage would need to drop below the fixed threshold of 2kV (default) before raising an alarm. However, with Adaptive Thresholds it must drop by 25% of the returned voltage to generate an alarm (based on a default of 75%). Should the voltage on the fence reduce due to environmental change, the alarm threshold will adapt accordingly based on the percentage (75% by default) of measured voltage. A bottom limit for adaption is configurable in Command Centre to ensure that deterrent and detection is always available in the system, so your perimeter will not be compromised.

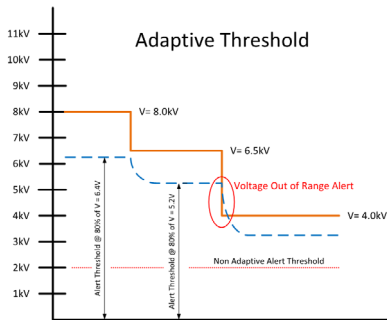
Overview of configuration

Adaptive Thresholds is provided as a standard feature in Command Centre from version 8.40 onwards. Each fence zone is individually configurable within Command Centre to provide maximum flexibility on a site. Under the "Alerts" tab of the fence zone properties, you can enable/disable Adaptive Thresholds and adjust configurable properties for maximum performance.



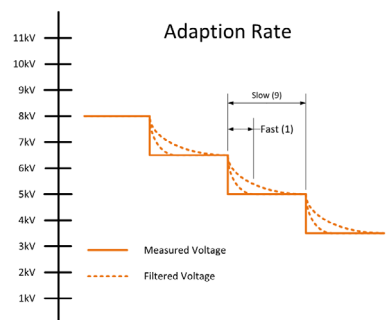
Alarm threshold (%)

This value refers to the level at which the threshold is set as a percentage of the return voltage measurement. For example, if the return voltage measures 8.0kV, and the alarm threshold (%) is set to 80%, the threshold will be at 6.4kV. Likewise, if the return voltage is 6.5kV, the threshold will be 5.2kV.



Adaption rate

Changes in voltage are logged within Command Centre as an immediate change. The adaption rate refers to how quickly the algorithm adapts to the changes, with values from 1 (very quick), which results in less smoothing of the voltage, to 9, which gives a much smoother line. The default value has been set at 3.



Command Centre reporting

The voltage reports have been updated in Command Centre to show the adaptive threshold, along with the voltage of the fence circuit, providing a quick reference of the performance and configuration of the threshold. Command Centre reporting with the adaptive threshold displayed is limited to one fence zone at a time, as displaying additional fence zones and thresholds runs the risk of misinterpretation of the data.



*Adaptive Thresholds is compatible with F3 and F4 series Fence Controllers using Command Centre version 8.40 onwards
 **Adaptive Thresholds does not replace the need for fence maintenance

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