



Knowledge Base Article

**Integrating the
ISONAS Access Control System
with Fire Alarm Systems**

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1: INTRODUCTION

For some installations, the access control system must be integrated with the building's fire systems. This requirement is under the control of your local "Authority Having Jurisdiction" (AHJ). Your AHJ may be the local fire marshal, the local building inspector, or the government facility's commanding officer.

Different AHJ's may have different criteria, but most base their standards on the National Fire Protection Association (NFPA) codes. The requirements can vary depending on the size and type of facility being secured (school, office high-rise, small store,...). A common interpretation of these requirements is:

Activation of the building automatic sprinkler system; fire detection system; or fire-protective signaling system, if provided, automatically unlocks the egress doors.

The Code also states that the doors must remain unlocked until the fire-protective signaling system has been manually reset.

Source:

DASMA TDS355

www.dasma.com

This document describes several methods that should be acceptable to your AHJ to accomplish this integration.

This article focuses on hardware-based solutions for this integration. It is assumed the doors being controlled by this integration will be using "Fail-Safe" electric lock mechanisms.

1.1: FIRE ALARM SYSTEM CONTROLLING THE POWER-OVER-ETHERNET (PoE) SOURCE:

Using PoE to power the components at the door drastically simplifies the installation and wiring process.

This section describes a method that allows you to integrate the Fire Alarm system into a PoE system, without requiring any additional wiring to be run to the door location (See Figure 1).

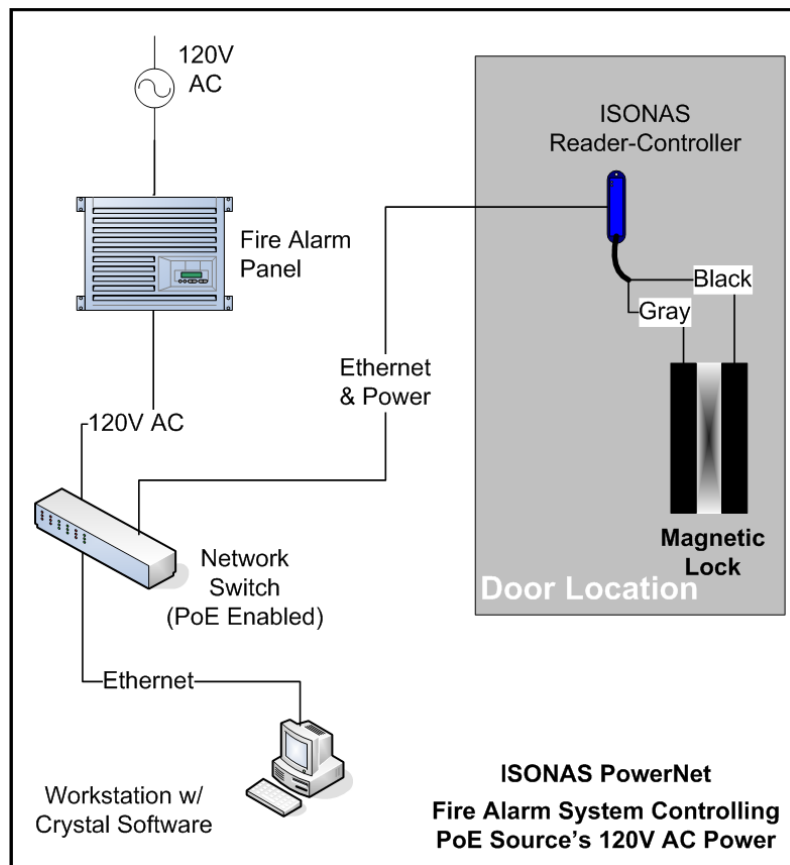


Figure 1

This solution configures the system so that the Fire Alarm Panel controls the input 120V AC power for the PoE switch (or PoE injector).

When the Fire Alarm system is activated:

1. The Fire Alarm panel disconnects the PoE Switch's AC power.
2. This interrupts the PoE power flowing to the Door
3. The power interruption forces the door's magnetic lock to release, and the door unlocks.

1.2: FIRE ALARM SYSTEM CONTROLLING THE LOW-VOLTAGE LOCK CIRCUIT:

An alternative solution involves having the Fire Alarm Panel wired directly into the magnetic lock's power circuit.

You might use this solution if you are retro-fitting an installation, and the wiring between the Fire Alarm system and the door is already in place.

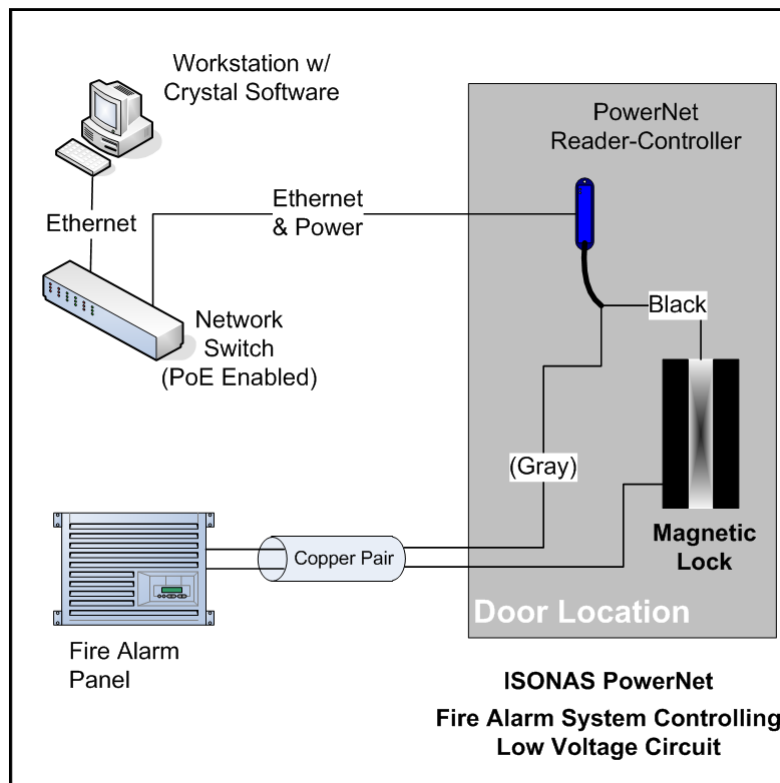


Figure 2

This solution configures the system so that both the Reader-controller and the Fire Alarm Panel have the ability to interrupt the flow of power to the door lock. (See Figure 2)

When the Fire Alarm system is activated, it interrupts the lock circuit, and the magnetic lock releases.

This solution requires specialized wiring between the Fire Alarm Panel and the door. Also, each door requires its own relay connection within the Fire Alarm panel.

1.3: HANDLING A MIX OF DOORS WITH PoE:

To illustrate the flexibility of the PoE solution, we will discuss a 6 door facility, where 3 doors are classified as “egress doors” by your local AHJ, and the other 3 doors are not.

You’ve made the decision that the non-egress doors are not to be affected by the Fire Alarm System. (See Figure 3)

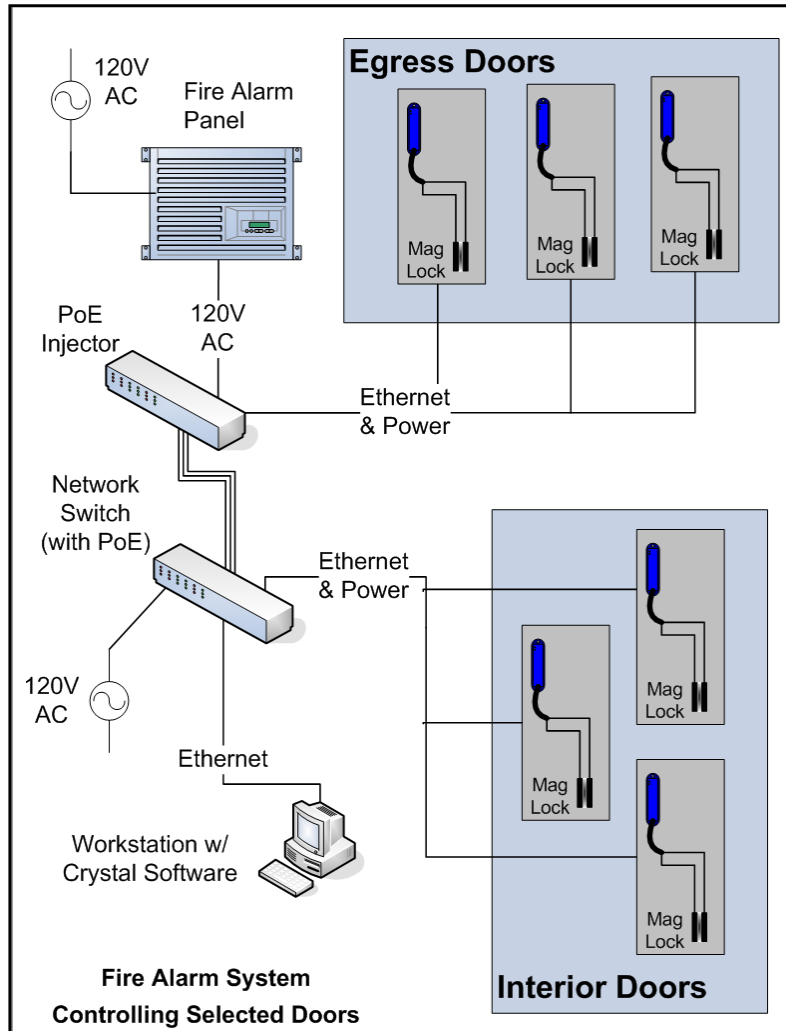


Figure 3

A separate PoE power source (PoE injector) is used for the egress doors, and the Fire Alarm Panel controls 120 VAC power for the PoE power source.

The non-egress doors are connected to another PoE power source, which is not connected to the Fire Alarm Panel.

Note that with this solution, a single connection from the Fire Alarm Panel can control multiple egress doors.

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