



# Coffee Break Training - Fire Protection Series

## Fire Alarms & Detection: Fire Alarm System Power Supplies

No. FP-2012-21 May 22, 2012

**Learning Objective:** The student shall be able to describe the primary and secondary power supply requirements for fire alarm systems.

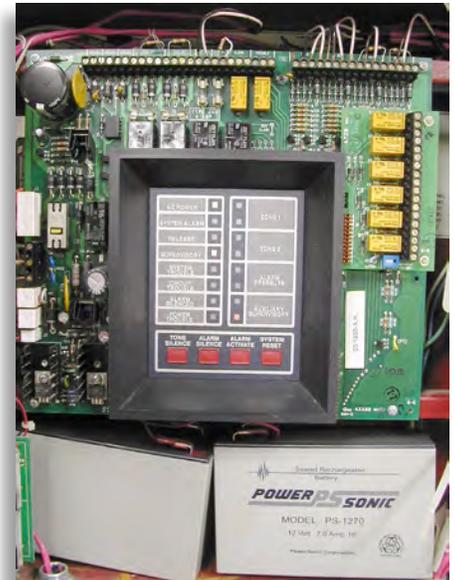
**F**ire alarm systems must be provided with at least two independent and reliable power supplies: one primary source that powers the system in normal mode and a secondary power source to take over in the event of failure of the first (standby mode).

Most fire alarm systems are connected to the local light and power utility as their primary power source. Once the electrical power service enters a building, it normally is distributed through a main electrical panel and one or more subpanels. The subpanels have individual branch circuits within them that provide power to outlets, switches, and fixed electrical equipment.

In the event of a loss of primary power, the fire alarm system has to be equipped with a secondary means of supply that will energize the system within 30 seconds without losing any signals. The secondary power also has to operate if the primary power (line voltage) drops below acceptable limits.

Secondary power may consist of one or more batteries, an automatic starting generator with batteries, multiple generators (one of which must be automatic starting), or uninterruptible power supplies (UPSs).

The secondary power supply must be capable of powering the entire fire alarm system in its normal operational mode for a specified period of time (at least 24 hours), and then sound an alarm for at least 5 minutes at the end of the standby period. Standby power demands are based on the type of fire alarm system that is employed.



This fire alarm control unit (panel) includes two batteries to provide a secondary power supply.

System Type	Standby Power Demands
Protected premises (local alarm)	24 hours
Emergency voice command	24 hours
Central station service	24 hours
Proprietary station service	24 hours
Auxiliary station service	60 hours
Remote station service	60 hours

For additional information, refer to National Fire Protection Association (NFPA) 72, National Fire Alarm Code®.



Eligible for Continuing Education Units (CEUs)  
at [www.usfa.fema.gov/nfaonline](http://www.usfa.fema.gov/nfaonline)

For archived downloads, go to:  
[www.usfa.fema.gov/nfa/coffee-break/](http://www.usfa.fema.gov/nfa/coffee-break/)