



No: 19e
Issue date: 11.11.08
Reference: NJP
Circulation: Unrestricted

TECHNICAL BULLETIN

Power supplies for Grade D Smoke and Heat Alarm systems with reference to The IEE Wiring Regulations, 17th Edition (BS 7671: 2008) and BS 5839: Pt.6: 2004

There have been claims, notably in a recent article in the Professional Electrician magazine (amongst others) that the 17th Edition states that Smoke Alarm systems should only be installed on a separate, dedicated circuit.

It is our view that this is incorrect, as there is no reference to smoke alarm systems in the 17th Edition, only systems to BS 5839: Pt.1 (the standard for fire systems in buildings other than dwellings).

It is worthy of note that one magazine who published the article in September issued clarification the following month, effectively retracting it.

Therefore, it is our view, and one shared by most professionals, that installers should follow the guidance of BS 5839: Pt.6: 2004. This allows smoke alarms, either hard-wired or using RadioLINK, to be connected to a local, regularly used lighting circuit.

The relevant clause in BS 5839: Pt.6 is as follows:

Clause 15.5 of BS 5839: Pt.6: 2004 states the power supplies for Grade D alarm systems (mains alarms with battery back-up) should be taken from one of the following:

1. An independent circuit at the dwellings main distribution board, in which case no other electrical equipment should be connected to this circuit (other than a dedicated monitoring device installed to indicate failure of the mains supply to the smoke alarms and any heat alarms),
OR
2. A separately electrically protected, regularly used local lighting circuit.

The NICEIC, IEE (IET), ECA, SELECT support the above recommendations and many have published this view in their various forms of on-site guides.

We recommend that hard-wired or RadioLINK Smoke and Heat Alarm systems are connected to a regularly used lighting circuit, as there is less likelihood that they will be deliberately disconnected. Most of the electrical associations also agree that this is the preferred method of connection.

There is no direct reference to RCD protection in BS 5839: Pt.6 for Grade D systems. However, it does state that some form of protection for the circuit should be provided; so installing a Grade D alarm system on an RCD protected circuit (in its various forms) would not be in contradiction with these requirements. We would be totally confident that one of our systems wired in this manner will not cause problems with nuisance tripping, if correctly installed and commissioned.

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