

Gas Appliances Directive (90/396/EEC)	
GUIDANCE B 6	Approved by WG -GA 02- 2005

Guideline related to:

ANNEX	I	Essential requirements
Section	3	Design and construction
Paragraph	3.1.9.	
Subject	Failure of a safety, controlling or regulating device	

3.1.9. Appliances must be so designed and constructed that failure of a safety, controlling or regulating device may not lead to an unsafe situation.”

Question

In modern appliances it frequently happens that an electronic reset device is applied to reset the appliance from volatile or non-volatile lock-out. Such a device can be for example an electronic room thermostat or a control board in the appliance itself.

What are the necessary safety requirements for the use of such reset devices?

Discussion

Resetting an appliance from lock-out is a safety relevant action. Therefore preventions shall be taken against unintended resetting. Due to the rather rare occurrence of mains interruptions in case of volatile lock-out it is allowed to reset the appliance by interrupting the mains. In case of non-volatile lock-out a manual reset on the appliance is required. Unintended reset action is not allowed at all (even in the case of tampering or misuse of the reset device).

If a simple reset device (a switch) is replaced by an electronic one, e.g. a room thermostat with a reset provision, an analysis has to be made of the failure modes of the signal output and input. In case of using a burner control system as resetting device, which is complying with the relevant standard, internal failures resulting into a static output signal, are no problem. They can be compared with stuck-at failures of a conventional reset device. An approved system will not react on this.

However dynamic output signals resulting from internal faults, e.g. in case of a malfunctioning program-counter, cannot be excluded. Such a dynamic signal will continuously reset the appliance, which is not acceptable. An electronic reset device should meet the requirements of internal failure behaviour

It is also that the judgement of the behaviour of the reset device shall be independent from the application: no gas appliance shall be subjected to unintended resets, even not under fault conditions.

This guidance is for information only; it has no formal status

Reference: 90/396/EEC “Gas appliances directive” O.J. L 196, 26.07.90, p. 15

Source of guidance document: GADAC

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Furthermore, when establishing the internal fault behaviour of a reset device it is not required to apply a two-fault criterion. The application of the single fault criterion, e.g. as described in EN 60730-1 (CENELEC), can be considered as being sufficient.

Conclusion

Those electronic parts of the device, which are involved in a reset action shall meet the necessary safety requirements as laid down in the relevant requirements for the appliance or fitting. The application of the single fault criterion, e.g. as described in EN 60730-1 (CENELEC), can be considered as being sufficient.

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