

## Alarm Handling

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Alarms are one of the most crucial aspects of any complex system. Alarm research has provided a few design heuristics. An alarm must be easily perceived, unambiguous, and easily understood.

First, the alarm must be easily perceived. The alarm panel should be in the periphery of the controller at all times. Further, each alarm should be clearly evident to the controller when it is initially displayed. Even when the controller is not looking directly at the system monitors it is critical that the alarms be evident. This requires both visual and auditory alarms. Usually different levels of alarms are denoted with different auditory cues.

Secondly, the alarms must be unambiguous. When a text alarm is displayed on the alarm panel, the alarm must be perfectly clear that it is an alarm and not a status message. Ideally, status messages and alarms are displayed on separate display panels. In reality, however, some systems do not allow for this separation. In this case, the status messages and the alarms must be clearly denoted so the controllers can more easily distinguish between the two.

Finally, the alarm must be easily understood. The text of the alarm must clearly state key factors, such as where the alarm originated, what the alarm pertains to, and when the alarm was initiated. These factors are critical and must not be written in a way that requires the controller to interpret the intended meaning. Anything less than complete clarity will require more mental effort of the controller. This equates to loss of time, incorrect evasive action, or alarm misinterpretation. Any of these points could lead to the loss of equipment, shut down of the system, or a line catastrophe.

