

# Smoke And Fire Detection - Reliable and Innovative AI&ML Based Solution

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## Background

Fire Detection and Alarm (FDA) system is an integrated and mandatory requirement for any electrical room (MCC, PCC, Automation, PLC, Drive room, etc. ) of any Industry. The system detects fire situations inside the room by detecting early smoke or fire and raises the alarm at appropriate level so that it is attended to, before major fire outbreaks.

FDA sensors are infra-red or LASER based and they sense dust or smoke from process plant and declare them as fire alarm. While each alarm must be treated as genuine, **frequent spurious alarms** can lead to complacency among maintenance personnel—posing a serious risk if a real fire event is ignored.

## Fire Detection Alarm (FDA) System with Vision-Based Verification Empowering Industrial Safety with AI:



To address the challenge of spurious fire alarms and improve operational efficiency, an in-house vision-based system has been developed. This solution can be integrated with existing FDA system and leverages AI-powered image verification to confirm the presence of an actual fire before triggering emergency protocols.

*(Picture from Inhouse developed project -Smoke & Fire Detection).*

## Key Features and Benefits

- AI-Based Smoke/Fire Verification and spurious alarm filtering..
- Manual Acknowledgement & Reset Logic.
- Seamless Integration with Existing Systems.
- Improved Operational Efficiency and safety.

Integrating vision-based systems with FDA enhances intelligent safety automation by reducing false alarms and minimizing human intervention in critical decision-making.

👉 For more information you can contact us through our website or email provided above.