

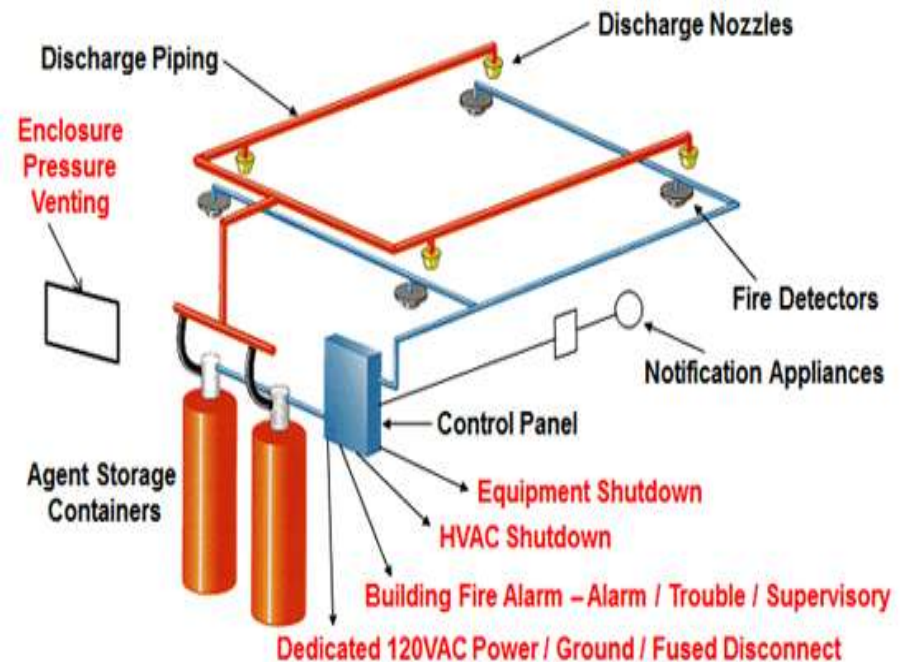
FIRE SUPPRESSION SYSTEM

ILP Based fire suppression for DG container

FIRE SUPPRESSION SYSTEM – ILP with solenoid & LHS TECHNOLOGY AND ITS USES

An **ILP-based fire suppression system** for a **DG genset** refers to a system that uses **Indirect Low Pressure (ILP)** technology, typically associated with **clean agent** or **CO₂** systems. These systems are designed to **automatically detect, suppress, and isolate** fires in **diesel generator compartments, control panels, or rooms**, with minimal human intervention.

Let me walk you through the concept and components of an **ILP-based fire suppression system** tailored for your **Diesel Generator** setup.



What is an ILP (Indirect Low Pressure) Fire Suppression System?

ILP (Indirect Low Pressure) is a **pre-engineered system** where:

The detection is **pneumatic** (via a heat-sensitive detection tube).

The suppression is done **indirectly** via **nozzles** connected to a suppression agent cylinder.

The system activates **automatically** when heat causes the detection tube to rupture.

This differs from **DLP (Direct Low Pressure)**, where the detection tube also acts as the discharge nozzle.

ILP-Based System for 2x40 kVA DG Genset

◆ **Suitable For:**

Generator engine compartments

Enclosed generator rooms

DG control panels

◆ **Typical Fire Hazards:**

Diesel fuel leaks

Engine oil

Electrical wiring and panels

Hot surfaces and exhausts

System Components (ILP)

Component	Description
LHS Cable	UL approved LHS Cable that detects high heat/fire
Agent Cylinder	Stores suppression agent (Novec 1230, FM-200, CO ₂ , etc.)
Discharge Nozzles	Sprays agent when the system activates
Control Panel (<i>optional</i>)	Supervises and interfaces with alarms and DG shut-off
Manual Release	Manual override for safety personnel
Pressure Switch	Monitors pressure loss, triggers alarm or shutdown
DG Shutdown Relay	Turns off generator to cut fuel source during a fire

Suppression Agents Typically Used in ILP

Agent	Features	Best For
Novec 1230	Clean, safe, no residue, non-toxic	Electronics and enclosed DG rooms
FM-200	Fast, clean, non-conductive	Small to mid-size engine compartments
CO₂	Cost-effective, non-damaging, oxygen displacement	Unmanned spaces, enclosed gensets
Dry Chemical (ABC)	Powder-based, low cost	Rarely used in ILP for gensets

Installation Layout (Typical for Each DG Set)

LHS Cable routed around the DG engine and control area

Cylinder mounted externally near the genset

Nozzles directed toward:

Engine

Fuel filter

Exhaust manifold

Control panel

System triggers when LHS Cable Shots ($\sim 175^{\circ}\text{C}/347^{\circ}\text{F}$)

Agent is released from cylinder through piping to nozzles

Optional: Alarm triggers, and generator shuts down

Compliance and Certifications

- **IS 16018**, NFPA 2001, or local fire codes
- CE, UL, or LPCB certified components
- Follow guidelines for:
 - Ventilation safety
 - Diesel storage
 - Emergency shutoffs

Key Advantages of ILP for DG Sets

- ✓ Automatic 24/7 protection
- ✓ No power required for detection
- ✓ Quick suppression and isolation
- ✓ Compact and modular
- ✓ Minimal maintenance compared to traditional systems

FIRE ENGINEERING TECHNOLOGY

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