SR VISION ENTERPRISES

Getting the **JOB** done **SAFELY**

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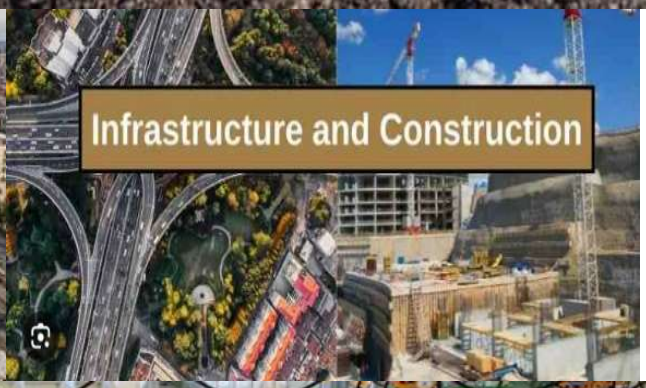

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SEMI AUTOMATIC FIRE DETECTION & SUPPRESSION SYSTEM

Description:

The **Semi-Automatic Fire Detection and Suppression System (SAFSS)** is a manual suppression system commonly used in **Heavy Earth Moving Vehicles (HEMVs)**, particularly in mining operations. These vehicles operate in high-risk environments where fire hazards are significant due to the presence of flammable materials, extreme heat, and complex electrical systems.

In this system, If the fire detected the operator must be **manually activated**. It uses **dry chemical powder** as the extinguishing agent, which is highly effective in quickly suppressing fires. SAFSS is especially designed for **smaller-capacity mining equipment**, **surface transport vehicles**, **buses**, **vans**, **oil rooms**, and other similar applications.

This system is robust and reliable, designed to function effectively in **dusty**, **humid**, and **temperature-variable** environments. In addition to standard models, customized systems can be developed based on customer requirements to ensure comprehensive protection for both **man and machine**. It is a **cost-effective and dependable** solution for semi-automatic fire suppression needs.

The SAFSS is capable of handling all major fire classes:

Class of Fire	Type of Fire	Type of Extinguisher	Extinguisher Identification	Symbol
A	Ordinary combustibles: wood, paper, rubber, fabrics, and many plastics	Water, Dry Powder, Halon		
B	Flammable Liquids and Gases: gasoline, oils, paint, lacquer, and tar	Carbon Dioxide, Dry Powder Halon		
C	Fires involving Live Electrical Equipment	Carbon Dioxide, Dry Powder Halon		

The system is modular and scalable. It typically starts with a **single 06 kg dry chemical powder cylinder**. Based on the area and protection requirements, the system can be expanded by:

- Increasing the number of cylinders (e.g., two or more 10 kg cylinders or higher capacity cylinders like 20 kg)

- Increasing the number of nozzles (e.g., 6, 8, 10, 12 or more) to extend coverage

Suppression is manual, ensuring the operator has control over the activation process.

System Components:

The Semi-Automatic Fire Suppression System consists of the following key components:

- **ABC Cylinders**
- **Delivery System**
- **Expellant Cartridges**
- **Spray Nozzle System**
- **Pilot Cylinder Assembly**
- **Other Associated Parts and Fittings**

How System Works:

Manual Operation:

In the event of a fire, the system can be manually activated by the vehicle operator through one of the following methods:

- By pressing the **knob** on the pilot cartridge assembly, typically installed at a convenient location such as near the stairs or on the ground floor—depending on the vehicle's configuration.

Once activated, the following process occurs:

- The pilot action punctures the rupture disc in the expellant cartridge valve.
- Pressurized **carbon dioxide gas** from the expellant cartridge enters the main ABC cylinder.
- This gas **fluidizes** the dry chemical fire extinguishing agent stored inside.
- The pressurized agent is then pushed through the **distribution piping** and discharged from **fixed nozzles** aimed at the high-risk fire zones.
- The fire is rapidly suppressed upon contact with the agent.

Post-Activation Requirement:

After the system is used:

- Both the **cylinder** and **cartridge** must be **refilled and re-pressurized** to their full rated capacity and pressure levels.
- This step is critical to ensure the **reliability** and **readiness** of the system for future fire incidents.