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المملكة العربية السعودية
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SFFECO
Est.1983

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شركة المصنع السعودي لأجهزة الإطفاء
SAUDI FACTORY FOR FIRE EQUIPMENT Co.

Empowering
a Safer Future for
the Kingdom

SFFECO CO_2

Carbondioxide Fire Suppression System

Quality Approvals for Various Products and Services

Assessed to ISO 9001:2015
Cert. No.: 1516

VER: 00-04-26

General Description

Carbon dioxide (CO2) is a colorless, odorless, and electrically nonconductive gas, making it a highly effective and clean extinguishing agent for a wide range of fire hazards. It is particularly suitable for protecting sensitive equipment and enclosed spaces, as it leaves no residue after discharge.

When a fire is detected, the CO2 suppression system is automatically activated, releasing CO2 into the protected area. The gas works by displacing oxygen within the environment, reducing it to a level where combustion cannot be sustained, thereby extinguishing the fire quickly and efficiently.

For larger hazard areas where multiple cylinders are required, a manifold system is used to interconnect the cylinders through flexible hoses and check valves, ensuring a reliable and uniform discharge. Each cylinder is equipped with a valve that regulates the flow of CO2 into a network of properly sized piping. This piping system directs the agent to strategically positioned discharge nozzles, which distribute the CO2 evenly across the hazard area.

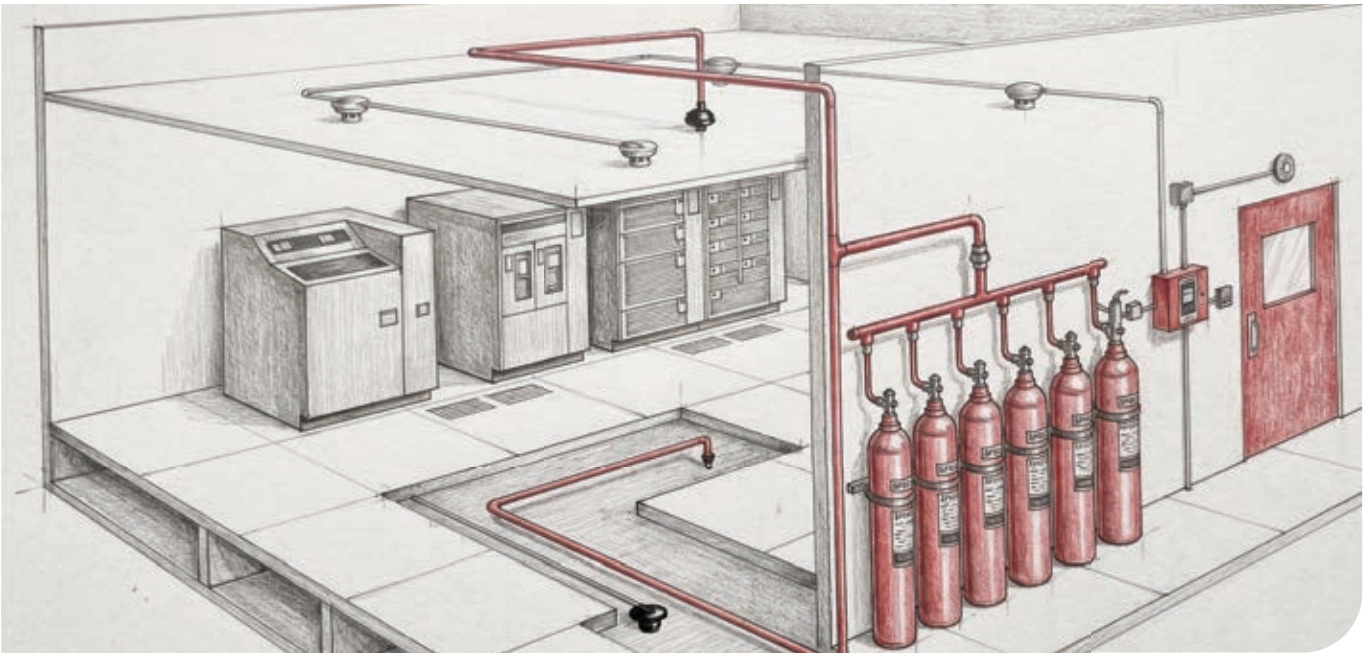
The flow rate and distribution pattern are carefully controlled through the combination of pipe sizing and nozzle orifice design to achieve optimal performance. Additionally, the master cylinder valves can be operated either automatically through detection systems or manually, providing flexibility and control in emergency situations.

General Features

- Suppress fire quickly
- Non - conductivity helps to use on live electrical equipment
- Leaves no residue and is not as damaging to electrical equipment as powder
- Suitable for class B and Electrical fires
- Can be used at IT server room, art galleries, museums, laboratories, document storage, etc.

Specifications

Chemical Name	Carbon Dioxide
Chemical Formula	CO2
Molecular Weight	44.01
Critical Temperature	31.0OC
Boiling Point	-109.3OF
Vapor Pressure @ 68OF	832 PSIG
Vapor Density @ 68OF	1.53
Solubility in Water @ 68OF	87.8% by Volume
Appearance and Odor	Colorless Gas, Slight Pungent Odor



Carbondioxide
Fire Extinguishing System

Components

Storage Cylinder

Model : SFC-45

Capacity: 45 Kgs

Material : Chrome Molybdenum Steel

Hydraulic Test Pressure: 250 Bar

Flexible hoses

CO2 discharge flexible hose is used to convey the CO2 gas from the outlet of the cylinder to the discharge manifold. This made of reinforced flexible rubber tested at 480 bar to withstand high pressure with stainless steel of brass coupling and swivel joint.

Head Valve for Fixed Installation

SFFECO CO_2 cylinders use a brass valve designed to hold the CO2 agent in the cylinder until actuated, either manual or automatic; (100-110 psig opening), with a safety relief disc as per NFPA 12, (ruptures above 2,650 psi).

Non Return Valve

The Check Valve is used to isolate the "Main and Reserve" supplies in a SFFECO Carbon Dioxide system. The Check Valve prevents pressurization of the "Reserve Bank" of Carbon Dioxide cylinders by blocking the flow of agent from the "Main" system discharge piping.

Control Head Valve - Electrical and Pressure Operated

Electrical control head valve activates the cylinder via solenoid signal from control panel.

Uses electrical operation and CO_2 pressure to open the valve piston.

Discharge Manifold

The manifold connects multiple CO_2 cylinders to a common discharge line, ensuring controlled and simultaneous release of the agent during activation.

Control Head Valve - Electrical Actuated

This type of control head valve operates the system cylinder electrically using pin-type pyrotechnic actuators, ensuring fast and reliable activation upon receiving an electrical signal.

Discharge Nozzles

Discharge nozzles are used for Local and Total Flooding applications to deliver the agent into the hazard area protected by Carbon Dioxide system. Available in different types, shapes and sizes to assure the effectiveness of the system and the quantity of gas required.

Pneumatic Control Head Valve

This type of control head valve operates the system cylinder through pneumatic principle, using CO_2 pressure to open the valve piston.

It allows discharge of gas into the protected area once the valve piston is activated.

Discharge Nozzles

The Main to Reserve switch directs operation between main and backup CO_2 storage systems. After discharge, it is set to "Reserve" for reset and maintenance, then returned to "Main" once refilling is completed. It can be mounted on a standard 4" electrical box.

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Since 1983, SFFECO has been a trusted name in fire protection, known for innovation and quality worldwide.

With state-of-the-art facilities in Riyadh and Dubai, we deliver a complete range of firefighting solutions that meet international standards.

Our innovative approach and comprehensive product portfolio make SFFECO the one-stop destination for reliable fire protection products and services.

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