Fike® Corporation

MARINE CO_2 SYSTEM

CATALOG NUMBER E.1.22.01

Architect and Engineer Specification

CO_2 Marine Suppression System

GENERAL DESCRIPTION

The Fike Marine Carbon Dioxide Extinguishing System is designed to be used on offshore applications where single or two-step manual actuation is required. The Fike Marine CO_2 system utilizes superior engineered products to accomplish system operation utilizing fewer components which lowers cost and increases system reliability.

The Fike Marine CO_2 system provides all the flexibility to meet various marine special hazard applications with a minimum of components, increasing reliability and decreasing costs. Some of the available components include manual pull box, pneumatic actuator, pneumatic time delays, pneumatic sirens, cable pulleys, and a full range of CO_2 racking and nozzles.

APPLICATIONS

Carbon dioxide has many desirable properties when utilized as an extinguishing agent. It will not damage cargo or machinery, and leaves no residue after system discharge. Since it is a gas, carbon dioxide will penetrate and spread to all parts of the space. It does not conduct electricity, therefore it can be used on live electrical equipment and it can be effectively used on most combustible materials.

Typical applications aboard ships for the Fike High Pressure CO_2 system include cargo spaces, machinery spaces, pump rooms, paint lockers, enclosed ventilation systems for rotating electrical equipment, and chemical store rooms.

SYSTEM OPERATION

There are three basic system configurations for a Marine high pressure CO_2 system. The hardware associated with each system varies due to the appropriate U.S.C.G. requirements. The basic system configurations are:

- Protecting a hazard that requires 300 pounds or less of CO_2.
- Protecting a single hazard that requires more than 300 pounds of CO_2.
- Protecting more than one hazard with a common grouping of carbon dioxide cylinders.

Below is an example system that is designed for protection of a single space that requires more than 300 lbs. (136.1 kg) of carbon dioxide. (See system layout drawing)

Cylinder actuation is accomplished pneumatically, with a nitrogen pilot cylinder. Secondary actuation is accomplished by a cable pull and a normally closed stop/directional valve.

When the lever on the pneumatic actuator is operated the CO_2 master cylinder valves open and the resulting carbon dioxide flows into the system manifold where a pneumatic time delay, pneumatic siren, and pressure switch are located. This flow will cause the pressure switch to operate, the alarm to sound, and the time delay to begin to cycle. When the time delay finishes cycling, the resulting agent flows to the normally closed stop/directional valve. If the normally closed stop/directional valve was operated during system actuation then the CO_2 flow would be directed to the slave cylinders and the system nozzles.

This system includes all cylinders and actuation equipment. Nozzles, bracketing, cable pulleys, and other options are not shown.

Some of the benefits of a Fike Marine Carbon Dioxide System are:

- Valve construction allows the pneumatic actuator to connect directly into the valve. No other actuation components required.
- Efficient time delay – Low equivalent length time delay allows the time delay to be installed directly in the manifold, minimizing the use of separate actuators and valves to control agent flow.
- All levers and controls are included with system components.

A detailed description of the each system configuration is located in the Fike Marine Carbon Dioxide Fire Extinguishing System Manual. Consult the appropriate data sheet for a detailed description of each component.

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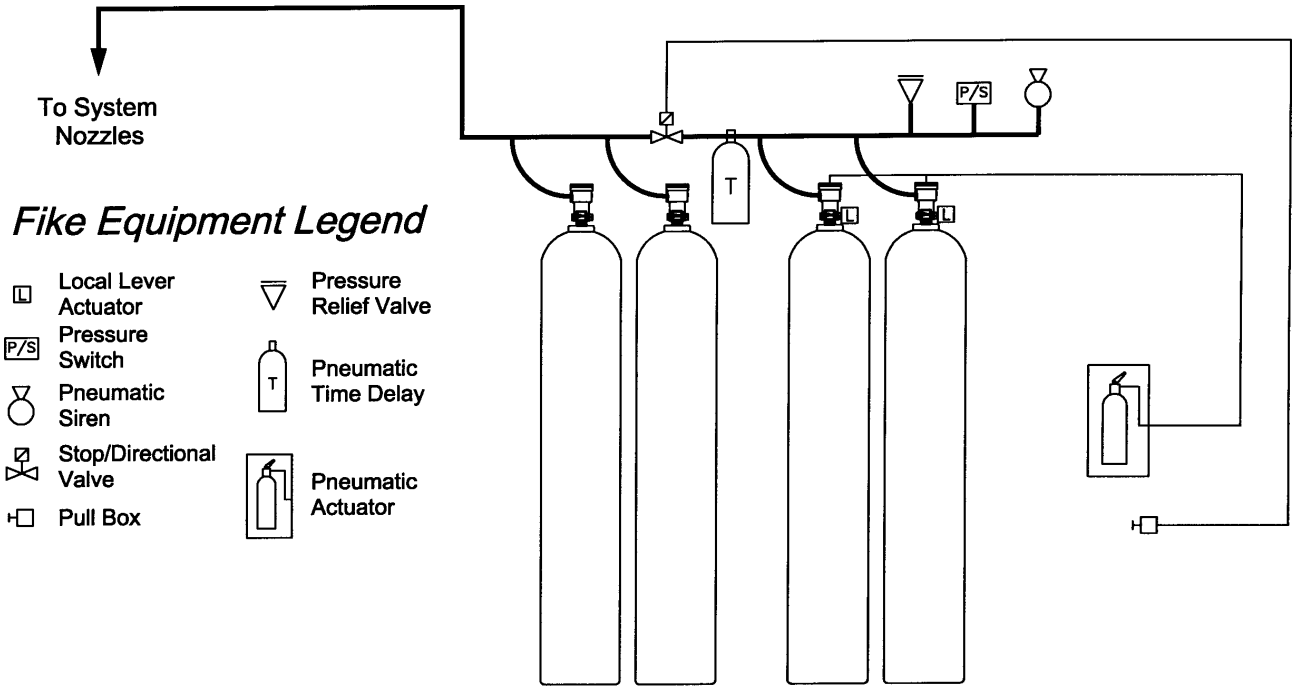

System Layout

Marine Carbon Dioxide System for Protection of a
Single Space Requireing more than 300 lbs. (136.1 kg) of CO_2

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