

# GEM 1230<sup>®</sup>

Our robust GEM 1230 Engineered Fire Suppression systems are Underwriters Laboratories Inc. (UL) listed, FM Approved and SIRIM Tested. Designed for total flooding, our systems are built in full compliance with the NFPA 2001 "Standard on Clean Agent Fire Extinguishing Systems" and UL 2166 Standard for Halocarbon Clean Agent Extinguishing System Units. Overall, the application and installation of GEM 1230 must meet the requirements or standards set by the Local Authority Having Jurisdiction.



## FK-5-1-12 Suppression Agent

Known as a Halocarbon Clean Fire Extinguishing Agent, FK-5-1-12 which is a combination of carbon, fluorine, and hydrogen (CF<sub>3</sub>CF<sub>2</sub>C(O)CF(CF<sub>3</sub>)<sub>2</sub>). FK-5-1-12 is a colourless, liquified compressed gas stored in welded cylinders, which is super-pressurised with dry nitrogen to 25 bar at 21°C (360 psi at 70°F). GEM 1230 systems are ideal for total flooding applications to suppress Class A, B and C fire hazards, and this is achieved by 80% heat absorption and 20% direct chemical means. Furthermore, FK-5-1-12 is environmentally friendly as it has zero ozone depletion potential.

### FK-5-1-12 is:

- ▶ Listed under National Fire Protection Agency (NFPA) 2001, Standard on Clean Agent Fire Extinguishing Systems
- ▶ Listed under Underwriters Laboratories (UL)
- ▶ Factory Mutual (FM) approved
- ▶ Listed under U.S. Environmental Protection Agency
- ▶ Accepted by the Malaysian Fire and Rescue Department as a Halon replacement

## 01 Manual Actuator

The manual actuator features a push button that is used to depress the valve core and release pressure from the cylinder discharge valve. This hardware is designed to be fitted on the top of the cylinder valve assembly or electrical actuator by hand tight only.



## 02 Discharge Nozzles

Nozzles are devices through which the agent is discharged within the protected closure. Made from brass with female threads, nozzles are available in various sizes, and can be installed in a pendent or upright position.



## 03 Electrical Actuator

The electrical actuator is connected to the top of the cylinder discharge valve by hand tight only, and is located between the valve and the manual actuator. The electrical actuator requires 24V DC for operation.



## 04 Check Valve

Check Valves are hardware specially designed to be used when two or more cylinders are manifolded together with one common discharge piping configuration. The purpose of the check valve is to prevent loss of agent through manifold when any of the cylinder are not connected at the time of system discharge.



## 05 Pneumatic Actuator

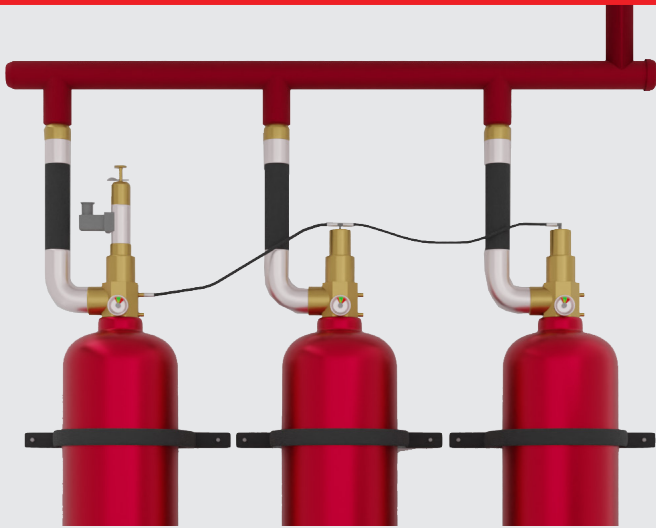
The pneumatic actuator features a pneumatically driven piston that is used to depress the valve core and release pressure from the cylinder discharge valve. This hardware is designed to be fitted on the top of the cylinder valve assembly by hand tight only. The pressure from the master cylinder is used to actuate the cylinder discharge valve of the slave cylinder via a flexible hose.



## CYLINDER ASSEMBLY

GEM 1230's cylinder assembly consists of a cylinder factory fitted with a valve and syphon tube. Available in various sizes, the cylinder is filled with FK-5-1-12 and super-pressurised with dry nitrogen to 25 bar @ 21°C (360 psi @ 70°F). All cylinders are manufactured, tested, and labelled in accordance with DOT 4BW500.

- ▶ Cylinders sizes : 16.7L , 28.3L , 52L , 106L , 147L , 180L and 369L.



Typical Installation Diagram

- ▶ One master cylinder and others slave cylinders are designated for multiple cylinders installed for intended to discharge simultaneously. In case there is a fire occurs, the master cylinder can be activated either electrically or manually. Whereas, the slave cylinders are activated pneumatically from the discharge action of master cylinder.

## Features & Applications

### Features

- ▶ Effective against Class A, B, and C fires
- ▶ Colourless, odourless, and non-contaminating gaseous fire protection
- ▶ Protect critical assets and processes without causing damage
- ▶ Little to no post-discharge clean-up
- ▶ Safe to use in occupied areas
- ▶ Proven by thousands of successful installations worldwide

### Applications

- ▶ Computer suites & data centres
- ▶ Gas turbine enclosure
- ▶ Offshore oil & gas exploration and production facilities
- ▶ Telecommunication centres
- ▶ Power generation
- ▶ Marine
- ▶ Museum, archives & data storage

