



# **FIRE DETECTION & SUPPRESSION SYSTEMS**

**U.S. COAST GUARD INSPECTED VESSELS**



**USCG / ABS APPROVED  
MARINE & OFFSHORE  
YACHTS & SHIPS**

**FIREBOY.COM  
GRAND RAPIDS, MICHIGAN  
POOLE, ENGLAND**

# WHY CHANGE? FROM CO<sub>2</sub> TO CLEAN AGENT

## SHIPBOARD FIRES ARE MAJOR THREATS TO SAFETY

One of the most dangerous perils at sea is fire. Difficult to deal with and potentially deadly, fire leaves the crew and passengers caught between two unforgiving elements. Fire fighting at sea and on water is especially demanding.

With so many levels of safety required to be put into place, even on the smallest installation, CO<sub>2</sub> systems add significant extra weight and cost to the overall build of any vessel. Imagine what you could do with the extra space generated by not having all of those extra cylinders in storage!

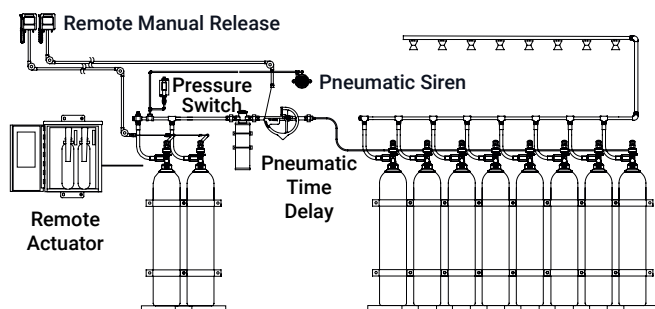
## SAFE FOR PEOPLE, EQUIPMENT, AND ENVIRONMENT

Carbon dioxide (CO<sub>2</sub>) can cause injury or death at the concentrations used in total flooding systems; and is nearly instantly lethal at those concentrations.

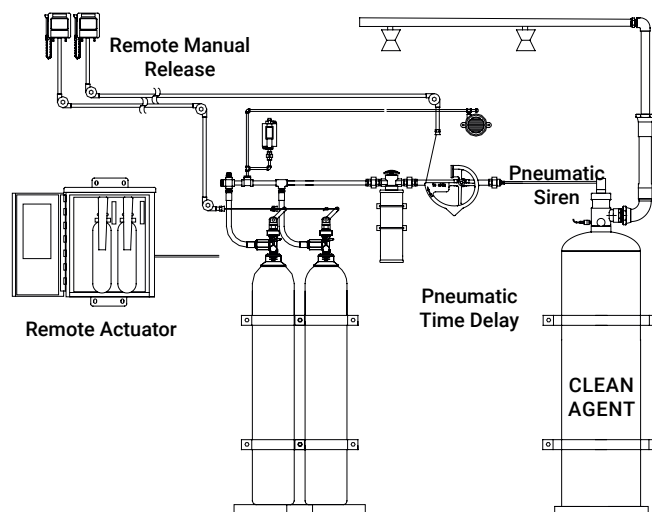
Today's 'Clean Agents' are approved worldwide for use in 'Occupied' spaces. However, even with these safe chemicals, similar design rules have to be maintained to comply with IMO SOLAS requirements. Replacing just the chemical agent will have a profound effect on safety.

## ADVANTAGES OF CLEAN AGENT SYSTEMS OVER CO<sub>2</sub>

- Weigh less than CO<sub>2</sub> systems for a given volume
- Take up less space than CO<sub>2</sub> systems
- Safer – CO<sub>2</sub> can cause serious injury or death



TYPICAL 'MARINE' CO<sub>2</sub> SYSTEM



TYPICAL MARINE CLEAN AGENT SYSTEM

# CLEAN AGENTS

## REMOVE HEAT ENERGY, NOT OXYGEN

### EVERY SECOND COUNTS WHEN A FIRE OCCURS ON BOARD

Clean Agent systems reach extinguishing levels in less than 10 seconds. Since even a few seconds can mean the difference between survival and a life-destroying catastrophic fire, changing to the Fireboy FES system could give you a crucial margin of safety. That's why you need a fast, people-safe and effective fire suppressant: Clean Agent waterless fire protection from Fireboy.

### PERFECT FOR NEW BUILDS AND REFITS

The Fireboy FES System provides the perfect choice for both new builds and refits and is currently the system of choice for many commercial and superyacht builders around the world. With the ability to eliminate a vast amount of industrial components, the advantages in both weight and cost are evident.

Effective on Class B and Class C fires, Clean Agent extinguishes fires quickly through a combination of chemical and physical heat removal, not by removing oxygen. Heat is absorbed from the flame zone and interrupts the chemical chain reaction of the combustion process. When fires are stopped this fast, it minimizes the risk of explosion and extensive damage.

### FK-5-1-12

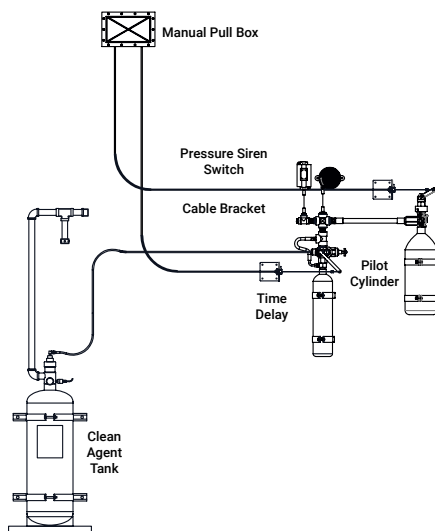
FK-5-1-12 is a clean fire suppression solution that offers an environmentally sustainable alternative to fluorinated chemical suppression agents, which does not compromise on performance or asset protection.

FK-5-1-12 offers rapid-fire suppression while alleviating installation and safety concerns which could be present in alternative inert gas solutions. Fire suppression applications often include the presence of people, so life safety is a critical issue when selecting a fire suppression product. Fire suppression fluid is both low in acute toxicity and a highly efficient fire extinguishing agent. This means

that fluid is designed to put out fires long before it reaches a level of concentration that could adversely affect humans, allowing ample time to egress the protected space. In fact, even at relatively high extinguishing concentrations, FK-5-1-12 fluid offers the widest margin of human safety over CO<sub>2</sub> and inert gas.

### BENEFITS OF THE FIREBOY FES ENGINEERED SYSTEM

- Safe for personal use
- Reduced component count
- Reduced piping and weight
- Reduced nozzle count
- Ease of installation
- Cost-effective replacement for CO<sub>2</sub>
- System monitor integration
- Multiple discharge panel facility
- Lower stored pressure



### CLEAN AGENTS ARE APPROVED FOR ALL NOTIFIED BODIES





# FIRE SUPPRESSION FIREBOY FES ENGINEERED SYSTEM

## MARINE FIRE SUPPRESSION FES SERIES

Fireboy FES Systems are designed based on the requirements of USCG, MSC Circular 848/1267, and NFPA 2001.

Fireboy Clean Agent Systems consists of DOT approved steel cylinder(s) equipped with a brass valve and internal siphon tube, and filled with FK-5-1-12, then super-pressurized to 360 PSI at 70°F. Multiple cylinders may be manifolded together in identical size and fill density to achieve coverage for the protected space.

8 cylinder sizes are available from 8L through 343L cylinders.



All systems are designed to IMO SOLAS CH II-REG 7 MSC.CIRC 848 & 1267

USCG system components are in compliance with the Fire Protection requirements of Marine Equipment Directive (MED) 96/98/EC as modified by Directive 2002/75/EC

## USCG AND ABS APPROVED

Fireboy will provide design assistance to supply the best solution to your Clean Agent Fire Suppression requirements. Our extensive fire extinguisher engineering and manufacturing expertise covers over 5 decades in the Marine Industry with the acknowledgment of Fireboy as innovators and supplier of top quality marine safety products. Our systems are in use on Commercial, Military, Yachts, Cruisers, and boats of all sizes and styles. When it comes to reliability, no one else has earned the high level of trust that we have.

For USCG Boats, there are two basic acceptable configurations of Clean Agent Fire Suppression systems acceptable to the marine market. Hazard areas under 6,000 cubic feet, without vertical egress may be installed without time delays and warning devices. For areas greater than 6,000 cubic feet, or with vertical egress, we include a 30 second time delay, and pneumatically activated warning sirens.

Drawings and designs to comply with:



PART NUMBER	TANK CAPACITY (LB)	OUTLET SIZE (IN)	DIM A NOMINAL		DIAMETER		EMPTY WEIGHT	
	lbs	in	in	(mm)	in	(mm)	lbs	kg
FES-8L-227	9-17	1 in NPT	12	(304)	10	(254)	32.6	(14.8)
FES-16L-227	18-35	1 in NPT	19.8	(502)	10	(254)	40.6	(18.4)
FES-32L-227	36-70	1 in NPT	32.8	(833)	10	(254)	57.5	(26.1)
FES-52L-227	58-114	2 in NPT	23.5	(596)	16	(406)	108.3	(49.1)
FES-106L-227	117-233	2 in NPT	40.2	(1021)	16	(406)	158.3	(71.8)
FES-147L-227	163-324	2 in NPT	53.3	(1354)	16	(406)	198.2	(89.9)
FES-180L-227	199-396	2 in NPT	64.3	(1634)	16	(406)	233.2	(105.8)
FES-343L-227	379-756	3.5 in Flare	57.7	(1466)	24	(610)	456	(207)

Designs can be supplied in the following formats: AutoCAD® (2D), Solidworks (3D)  
Cylinder Stored Pressure: CO<sub>2</sub> 2025 PSI – FK-5-1-12 – 360 PSI

# **FIRE SUPPRESSION**

## **FIREBOY FES ENGINEERED SYSTEM**

### **FIRE SUPPRESSION IN SEVERAL LOCATIONS AT ONCE**

Fireboy Systems have been used for suppressing fires in several locations on a ship. Typical shipboard hazard locations include, but are not limited to:

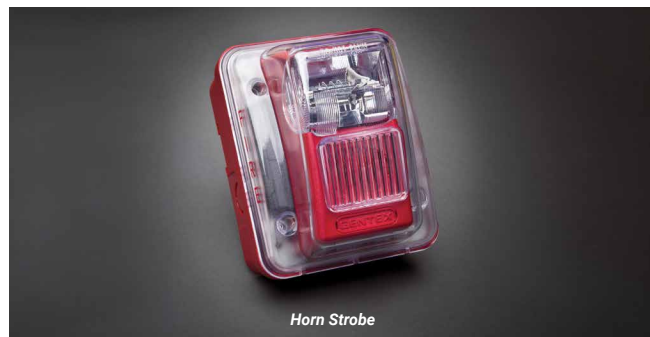
- Engine rooms
- Flammable liquids storage
- Generator rooms
- Pump rooms
- Machinery spaces
- Paint lockers
- Electrical control rooms
- Battery rooms

### **THE FES SYSTEM IS ACTIVATED SEVERAL WAYS DEPENDING ON THE SPECIFIC SUPPRESSION APPLICATION**

- Thermally with a quartzoid bulb
- Pneumatically
- Manually
- Combination of the above



Manual Activation Station



Horn Strobe



# FIRE DETECTION

## FIREBOY MARINE SAFETY SYSTEM

### MARINE & OFFSHORE: SYNCRO ASM ANALOG ADDRESSABLE FIRE ALARM CONTROL

Host up to 128 fire detection devices per loop and 256 per system. Fireboy Syncro ASM uses leading edge microprocessor technology to provide a flexible control system with high reliability and integrity. Designed for all small to medium sized vessels, Syncro ASM control panels can be expanded and networked to handle 16 independent loops.

With its large graphical display and ergonomic button and indicator layout, the Fireboy control panel is simple and easy to understand for installers, commissioning personnel, and boaters alike.

### FEATURES

- 16 zones LED indicators
- 2 programmable NAC circuits with internal synchronization support
- 5 programmable inputs
- 3 programmable relays



### CONFIGURATION FEATURES

- Comprehensive day/night mode facility
- Programmable one touch test mode
- Powerful and versatile cause and effect programming
- Cause and effect wizard including cause and effect action, disablement configuration, and test mode configuration

### TECHNICAL

- **Panel dimensions**  
14.5"W x 18.9"H x 4.25"D
- **Weight**  
20 lbs (without batteries)
- **Main voltage supply**  
110 or 220 VAC 50 or 60 Hz
- **Display**  
8 lines of 40 characters graphic LCD
- **AUX 24V supply**  
Fused at 500 mA
- **Battery 24 hour standby**  
9 Ah 12V (2 per panel) (non-networked)
- **Detection loop**  
250 milliamp output
- **Detection protocol**  
Apollo Discovery
- **Printer port**  
Serial RS232
- **Serial expansion port**  
Serial RS485
- **PC port**  
Serial RS232
- MED & RINA approvals

# FIRE DETECTION

## FIREBOY MARINE SAFETY SYSTEM

### ELITE CPM CONVENTIONAL FIRE CONTROL PANEL

- UL864 approved
- Two, four, or eight initiating circuits
- 24 hour standby with 7Ah batteries
- 4.0 Amps total NAC power available
- 5 Amp power supply
- Resettable AUX power output rated at 0.3A listed
- Initiating circuits individually configurable as fire or supervisory
- Alarm verification selectable by zone
- Fire, trouble, and supervisory relays
- Many advanced configuration options



Elite CPM Panel



### FBD-2 (2 ZONES)

- Visual and audible indication of a fire or fault
- Water resistant display
- Includes 86dB horn
- Supply voltage: 12/24V DC
- Voltage and EMI protected
- Reverse polarity protected



### FBD-MZ CONVENTIONAL FIRE DETECTION SYSTEM (4-12 ZONES)

- 3.5" Square LCD back-lit color display
- Programmable from 4 to 12 zones
- Monitor up to 8 detectors per zone
- Auto-sensing 12/24V DC supply
- Voltage, reverse polarity and EMI protected
- CE marked
- Monitor Fireboy CM D5/6-M CO Alarms through FBD display

NOTE: FBD systems do NOT have UL or USCG approvals but are often used on self-inspected and private vessels.



# **FIREBOY**

## **ON BOARD, ON GUARD®**

### **CG/MA AND CU/MU SERIES: MANUAL/AUTOMATIC DISCHARGE FIXED CLEAN AGENT FIRE EXTINGUISHER**

- Protects engine rooms and machinery spaces
- Pre-engineered, total flooding system
- The safest way to combat an engine room fire
- Automatic discharge at 175°F (79°C) with optional manual release
- No water or powdery residue
- Includes locking lever for increased safety when removing or installing cable
- Includes powder coated mounting bracket and 2 in. helm display
- FK-5-1-12 clean extinguishing agent



MA NVC-F Series Extinguisher

### **GA SERIES: LARGE CAPACITY MANUAL/AUTOMATIC FIRE EXTINGUISHING SYSTEM**

- Designed for larger boats, yachts, commercial applications
- Protection from 600 cu. ft. to 4000 cu. ft. with FK-5-1-12
- Pre-engineered, total flooding system
- Single and patented two-cylinder linked system design
- Located inside or outside protected area
- No water or powdery residue
- 3-year limited warranty
- USCG, Factory Mutual, ISO, RINA, Bureau Veritas Approved
- Limited to 2,000 cu. ft. on USCG inspected vessels



GA Series Extinguisher

### **CMD6 SERIES CO ALARMS**

- Electrochemical sensor for immediate and stable sensing
- Long sensor life – approx. 7 year End of Life (EOL)
- Multiple location warning
- Compact design for inconspicuous protection
- Battery operated version (CMD6-MB) requires no power wiring
- CMD6-MxR available for generator shutdown



CMD6 CO Alarm