

Firekill HFC227 - RINA Approved ISO 9094:2015 - EC Certified

DESCRIPTION

FIREKILL is an automatic extinguishing system composed by a pressurized cylinder filled with clean gas HFC227.

It is equipped with manual remote control and equipped with a thermosensitive bulb, at 93°C (or on request at 68°).

A pressure switch will allow to check the charge, to close potential openings and to shutdown engines, generators, forced ventilation, or other permanently installed equipment which could compromise the discharge of extinguishing medium in the protected area.

If the equipment is located inside the space protected or if the activation of the fixed system is automatic, a visual indication of discharge outside the protected room shall be provided.

The visual indication must be chosen by Customer depending on the detection system specifications. FIREKILL has a versatile valve, it could be completely automatic without use of any source of energy. It could be equipped with a manual remote control pull cable or on request an electric actuator. Moreover it is possible to connect a control panel complete with smoke or temperature detectors.

FIREKILL unique valve has two outlet diam. 3/8" pipes, a maximum of 4 nozzles, it may distribute the jet with precision in the effective point of the fire risk. Assembly without necessity to thread tubes, extremely easy and quick. Suitable also to protect mixers of varnishes, garages, flammable liquids storage, etc.

The kit includes following parts:

- Steel cylinder CE;
- Rapid discharge valve made of chromed brass M30 with pressure gauge and thermosensitive bulb at 93°C (5)
- Extinguishing agent
- Pipe with fast connection couplings (3)
- Discharge nozzles made of chromed brass (1)
- Remote control with handle (4+2)
- Wall bracket (8)
- Electric actuator (6) (optional) which connects the remote control to an automatic control panel



Code	Charge (Kg)	Protected zone (m³)	Q.ty nozzle	Max pipe length mt x 2	Dimensions	
					Ø [mm]	H [mm]
60.950A.FQ00.00	1	1.7	2	1	110	380
60.950A.FA01.00						
60.950B.FQ00.00	3	5.1	2	2	130	400
60.950B.FA01.00						
60.950E.FQ00.00	6	10	2	2.5	160	475
60.950E.FA01.00						
60.950F.FQ00.00	9	15	4	3	160	545
60.950F.FA01.00						
60.950G.FQ00.00	12	20	4	4	190	610
60.950G.FA01.00						

DESIGN OF EXTINGUISHING AGENT QUANTITY

HFC is a gas for total flooding system, the volume showed in below table is referred to the engine room.

Compartment shall not have opening for ventilation

HFC 227 EXTINGUISHING AGENT

HFC 227 agent (chemical composition C3 HF7) is a "clean agent" with no impact to atmosphere, its ODP value (Ozone Depletion Potential) is equal to 0. Use concentration is lower than NOAEL

USE

If you want to activate the system manually, you need to:

- 1) Pull the handle (2) in case of fire
- 2) (If installed) Push the button on the control box to activate the pyro actuator

OPERATION

The unit is pressurized at 10 bar at 20°C

On request it will be available even 2 and 4kg

Legend

FQ00 = Label (EN, FR, DE, ES)

FA01 = LABEL (IT, EN)

00. = BULB 93 °C

Table A-1-6.1.2(a) NFPA 2001	
Toxicity Information for HFC227ea®	
Property	Value (%)
ALC	>80 in 20% O ₂
(NOAEL)	9.0
(LOAEL)	10.5
Note: ALC is the concentration lethal to 50 percent of a rat population during a 4-hour exposure. The ALC is the approximate lethal concentration	

INSTALLATION

The FIREKILL must be hanged to its metal wall bracket inside or outside the protected area. Check the pressure looking at the pressure gauge: the needle must be in green sector. Fix the pipes (3) from the FIREKILL body to the area to be protected, connect the discharge nozzles (1) at the end of the pipes (3), near the dangerous point or the protected area. Fix the remote control cable (4) to the hexagon (7) and to the remote control handle (2).

Safety pin (5) must be pulled out at the end of all above operations. Now the FIRE KILL is ready to work.

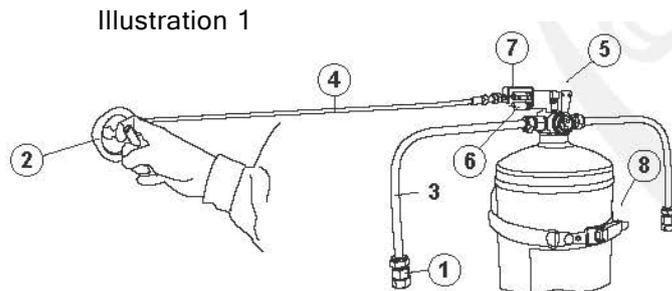
FIREKILL can be activated manually by pulling the remote control handle (2), otherwise automatically when the bursting temperature of Sprinkler bulb is reached.

Bulb glass can be supplied with bursting temperature at 93 or 68°C.

The electric actuator (6) can be supplied on request. It can be connected with an emergency control push button or through a control panel in case there is an automatic detection system. An automatic detection system for our FIREKILL can be composed by:

- Low pressure switch (code.00.950E.4970.00), which directly indicates alarm leaks or discharging
- Control panel which enable the perfect control of the full system (cod. 23022) - Optional
- Thermosensitive detectors, cables or candels.

The electric actuator is a pyrotechnical charge, 5 years guaranteed at a work. The pyrotechnical charge can work with minimum 12 V tension and 1A current - Optional



Mount only in vertical position. For horizontal need, contact factory before ordering

TORQUE FORCE

The valve is screwed down to the tank at the prefixed torque force between 50 and 60 Nm

USE AND WARNING

Even the HFC 227 is recognize as safe product for human health, it is recommended to avoid in any case the direct contact with skin and not to breath it during/after discharge or maintenance operations.

In case of skin contact with the product it is recommended to wash the part with plenty of water. If necessary contact medical centre

USE REMARKS

- 1) The equipment can be used on electric fires (control panel or switch boards)
- 2) Ventilate room after gas discharge/intervention
- 3) Refill and recharge the unit even partially used

MAINTENANCE AND PERIODIC INSPECTION

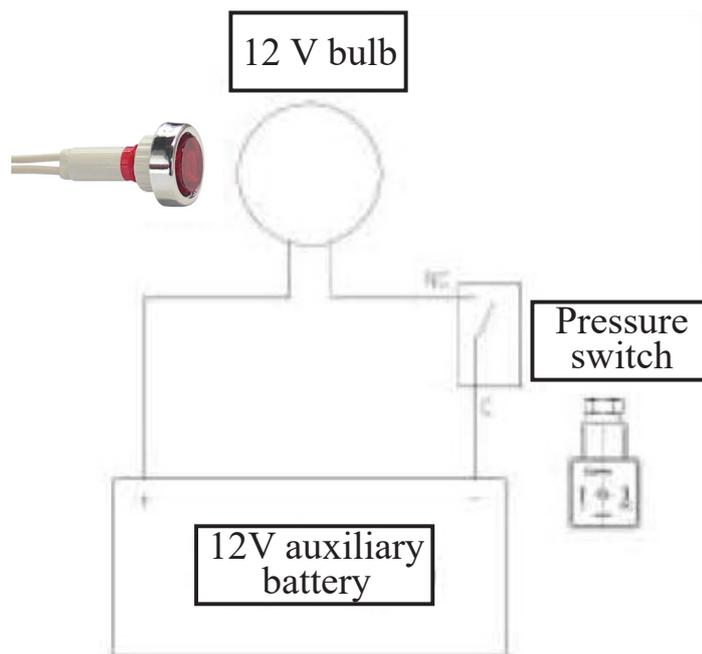
The maintenance and installation operations must be carried out by specialized personnel qualified to use pressure equipment and must be certified in accordance with F-Gas EC Reg. 304/2008.

During maintenance of the FIREKILL, all the warnings and precautions necessary to prevent accidents must be taken into consideration and implemented.

Failure to do so could result in serious injury to personnel and things.

The maintenance of the FIREKILL must be carried out with the frequency indicated in the countries where it is installed, in Italy it must be carried out in accordance with the Circolare "Sicurezza della Navigazione Serie generale n 100/2014".

A company who makes above activities and disposal of extinguishing agent should be authorized for such works. Periodically check that pressure gauge indicators is on the green field, that means the equipment is still well pressurized and ready to be used. If pressure gauge indicator is on red field, refer to authorized maintenance company



ELECTRICAL CNNECTIONS

The electrical connection to the pyrotechnical actuator must be made by a shielded wire; it must be connected directly from battery to the emergency push-button (Control Box - Code 23022) and to the actuator. Avoid to connect the actuator indifferent positions (like fuses panel) to avoid accidental activations

PRESSURE SWITCH PRESET AT 5 BAR

Low pressure switch (code.00.950E.4970.00), which directly indicates alarm Leaks or discharging.



(code.00.950E.4970.00)

Adjustable N.O. or N.C

REPLACEMENT OF THE ELECTRIC ACTUATOR (ILL.2)

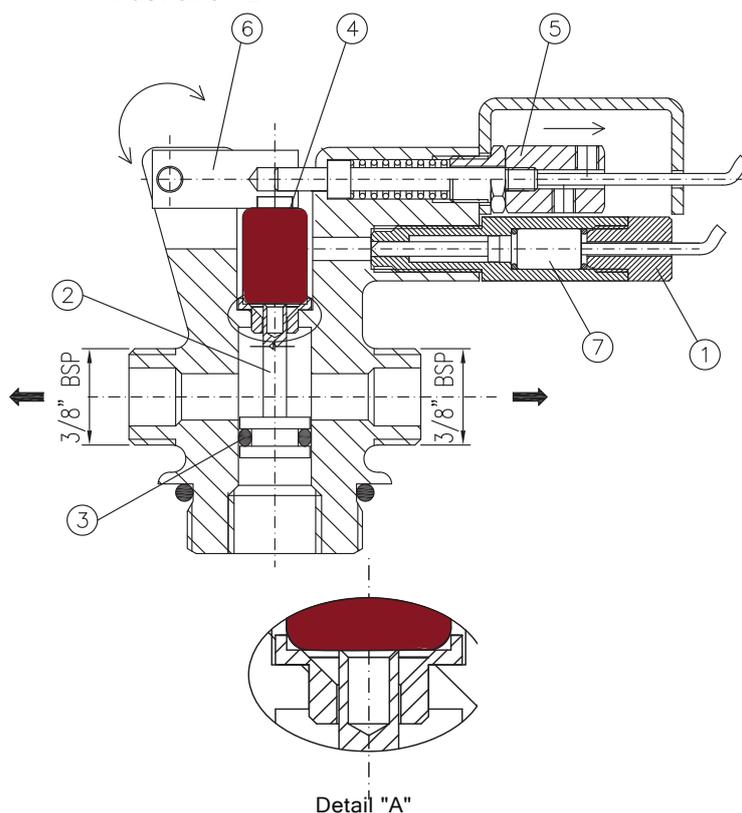
After 5 years, the electric actuator must be replaced with a new one as described above:

- disconnect cables
- unscrew the actuator (1)
- screw the new actuator checking that the part outside measure will be 2 mm
- connect cables

Replacement due to the explosion of the pyrotechnical charge (verifying that the cylinder is discharged):

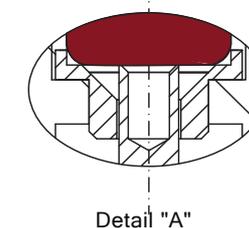
- disconnect cables
- unscrew the actuator (1)
- unscrew the valve from the cylinder
- extract the piston (2) and replace the O-ring (3)
- after having put the piston in the valve, screw the valve on the cylinder
- put the new bulb (4) in the valve
- pull outside the nut (5) and turn the leverage (6) till it is positioned on the bulb. Release the nut (5) (be sure that the leverage (6) is locked) replace the cartridge with a new one and screw it till the outside part will be between 2 mm

Illustration 2



ATTENTION (DETAIL "A")

During the maintenance of the valve check the perfect matching of the plunger and bulb as detail "A"



RED LIGHT

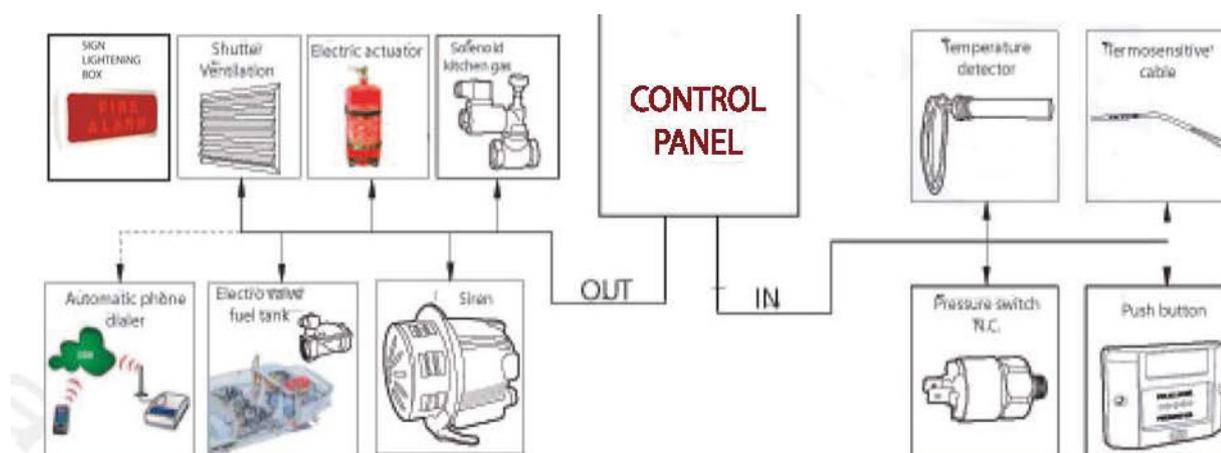
The visual indicator lets you check the charge of the equipment
Cod.P.504.RV.065.00 - 12V and P.504.RV.066.00 - 24V



Cod.P.504.RV.065.00

ACCESSORIES ON REQUEST - FIREKILL SYSTEMS

On request the firekill system can be electrically activated with automatic detection system. In the scheme below you can see an example of automatic detection system for firekill system with all its available options



ELECTRIC ACTUATOR

It can be connected with an emergency control push button or through a control panel in case there is an automatic detection system.

The electric actuator is a pyrotechnical charge, 5 years guaranteed at a work. The pyrotechnical charge can work with minimum 12 V tension and 1 A current



Electric actuator - code 00.951E.5080.00

ACCESSORIES ON REQUEST - FIREKILL SYSTEMS

TEMPERATURE DETECTOR

The apparatus consists of two contacts mounted on two curved strips of nickel-iron, the contacts are electronically isolated from the strips. This complex is in turn mounted in stress conditions in a sheath consisting of a tube extruded AISI.

The temperature at which the sheath is taken. Any change in temperature dilates the sheath, which thus increases the tension that it exerts on the plate, switching the contact, as appropriate



Preset at 141 °C - code P504.RV.038.00
Preset at 68 °C - code P504.RV.019.00

MINIBEND

Minibend for copper and aluminum pipe for ext. Ø 8 - 10 - 12 mm ideal to bend firekill pipes

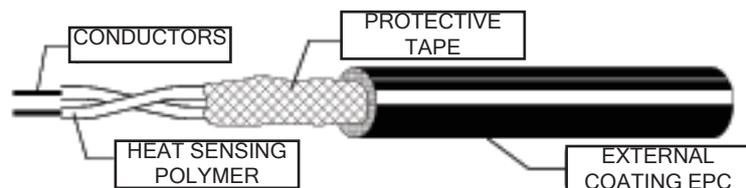


Code 28053

THERMOCABLES

Linear heat detector, (thermocables) is a twisted double steel conductor cable with a special insulated sheath sensible to heat, wrapped with a protective tape, and overall surrounded with a special vinyl outer jacket (EPC) that has low moisture absorption, excellent resistance to UV radiation, and to a chemical agents (Gasoline, Ammonia, Methanol, Nitric Acid), and resistance to low temperatures (-40°C).

When intervention temperature has been reached, the insulation of the conductors melt down. Due to the twisted condition of the steel wires, there is the necessary mechanical strength to trigger immediately short circuit conditions



Fixing base for thermocables - P504.RV.044.00

Code	Temperature	Approval
P504.RV.033.00	105 °C	-
P504.RV.034.00	88 °C	UL/FM
P504.RV.035.00	105 °C	FM
P504.RV.036.00	138 °C	UL/FM
P504.RV.046.00	68 °C	-

CONTROL BOX

This unit is used in combination with Firekill extinguishing system for boat engine or electrical board. Led green indicates that circuit is operative. Red light indicates that the equipment has been discharged.

Alarm audible buzzer included in the units will sound when system has been activated. Remove safety pin lift, open door, press red button inside to activate discharge



Control box - code 23022