

Easyfire® HFC227 - RINA Approved ISO 9094:2015 - EC Certified

DESCRIPTION

The automatic extinguisher EASYFIRE® has been designed to have a very easy and quick installation way and to be in conformity with EN 15004 and NFPA 2001. This extinguishers can be installed and used to fight all class A B C fires.

EASYFIRE® unit is suggested to protect heater rooms, engine rooms, boats, inflammable deposit. 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 fire extinguisher 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.

Automatic fire extinguisher EASYFIRE® are approved by RINA (Italian Naval Register) for small boats according to ISO 9094:2015 rule and PED by Bureau Veritas.

Extinguisher main components are:

- Automatic valve with bulb setted at 93°C (on request at 68°)
- Marine bracket
- Pressure switch
- RINA recognised extinguishing agent HFC 227 (known as FM200)

This automatic unit is specially designed for onboard engine boat, to protect fully automatically the engine compartment and or electric panels and mainframe



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

WORKING PRINCIPLE

EASYFIRE® where the presence of personnel is not foreseen. Unit intervention is done by seal bulb rupture.

This bulb breaking could happen by one of following ways:

A) by temperature increasing during first period of fires, this will cause a bulb breaking and a consequent discharge of the extinguishing agent.

B) Other system for bulb breaking, on request, could be:

- a) by manual discharge control device (code 00.951E.5081.00)
- b) by using a pyrotechnical actuator (code 00.951E.5080.00)

EASYFIRE® with automatic glass bulb discharge valve are to be used in engine rooms.

In case of presence of people in the protected area the EASYFIRE® unit must be equipped with glass bulb not heat sensitive and with hand operated control only.

In case the unit requires maintenance, the system must be disconnected (even automatic or manual mode).

If the pressure gauge pointer is on red field it is necessary to call technical assistance to proceed with maintenance verifications

INSTALLATIONS

The unit must be installed using its special support (included in the std supply) with sprinkler valve downward. Upon request a special horizontal execution could be supplied

Code	Charge (Kg)	Protected zone (m³)	Dimensions	
			Ø [mm]	H [mm]
60.951A.FQ00.00	1	1.7	110	370
60.951A.FA01.00				
60.951B.FQ00.00	3	5.1	130	390
60.951B.FA01.00				
60.951E.FQ00.00	6	10	160	465
60.951E.FA01.00				
60.951F.FQ00.00	9	15	190	600
60.951F.FA01.00				
60.951G.FQ00.00	12	20	190	600
60.951G.FA01.00				

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

OPERATION

The unit is pressurized at 10 bar at 20°C

TORQUE FORCE

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

HFC 227 EXTINGUISHING AGENT

HFC 227 agent (chemical composition C3 HF7) is universally recognized a "clean agent" with no impact to atmosphere, its ODP value (Ozone Depletion Potential) is practically equal to 0

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 AND REMARKS

- 1) The extinguisher 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 EASYFIRE, 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 EASYFIRE 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 extinguisher agent should be authorized for such works. Periodically check that pressure gauge indicators is on the green field, that means extinguisher is still well pressurized and ready to be used.

If pressure gauge indicator is on red field, refer to authorized maintenance company

PRESSURE SWITCH PRESET AT 5 BAR

Low pressure switch code 00.950E.4970.01, which directly indicates alarm Leaks or discharging

RED LIGHT

The visual indicator lets you check the charge of fire extinguisher

Cod.P.504.RV.065.00 - 12V and P.504.RV.066.00 - 24V



00.950E.4970.01



P.504.RV.065.00

Table A-1-6.1.2(a) NFPA 2001

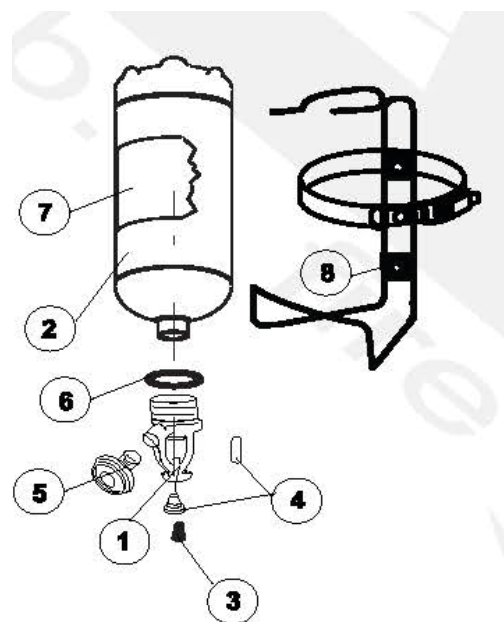
Toxicity Information for HFC227ea®

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

SPARE PARTS LIST

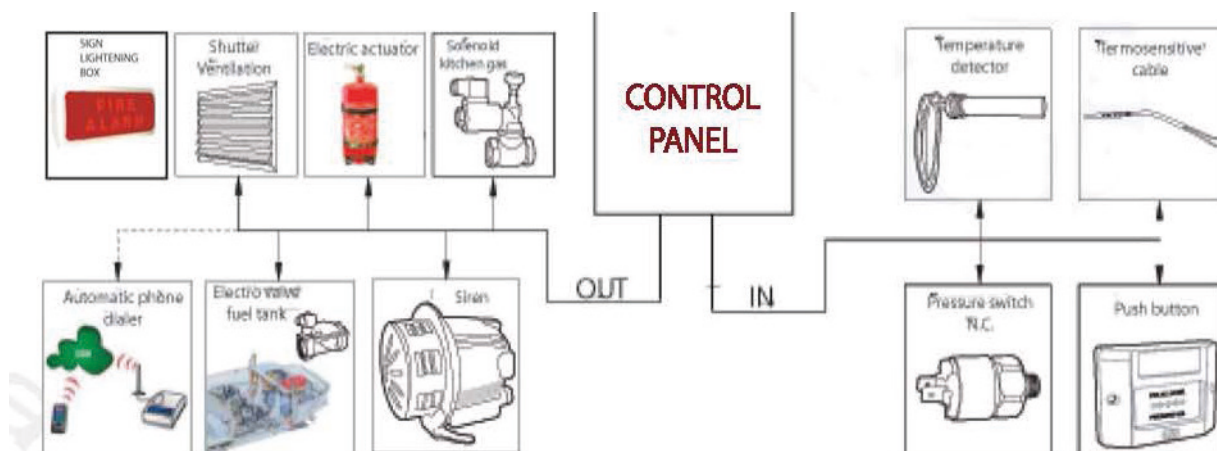
#	Description	Code
1	Complete valve	00.951C.6960.00
2	EC Cylinder	*
3	Bulb screw	24002/V
4	Spindle plug and 93°C Bulb glass (on request bulb 68°C)	25006 / (P500.SP.0068.00)
5	Manometer	00.951C.4900.00
6	O-ring of valve	00.350F.1100.00
7	Extinguisher agent HFC227	60.000Z.0001.03
8	Wall support	*
9	Belts and locker (is not included for the system to be 1 kg)	21081



ACCESSORIES ON REQUEST - EASYFIRE® SYSTEMS

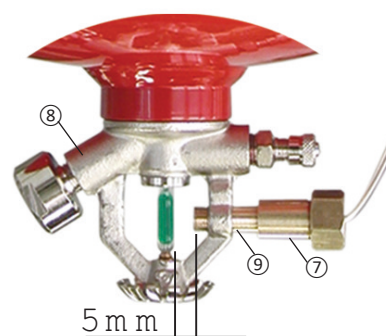
On request the easyfire system can be electrically activated with automatic detection system.

In the scheme below you can see an example of automatic detection system for EASYFIRE® system with all its available options



ELECTRICAL CONTROL DEVICE INSTALLATION PROCEDURE

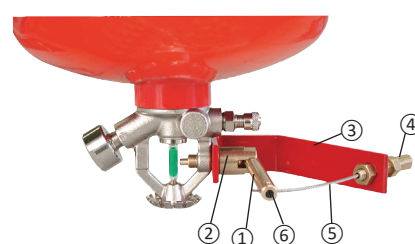
- 1) Install electric control device (7) on the valve (8) checking that gap (free space) between glass bulb and actuator pin is 5mm adding distanzial code 21076 (9)
- 2) Connect electric cable of pyrotechnic cartridge to fire detection panel (discharge card/module) or to control box optional (code 23023)
- 3) Electrical actuator can work with a minimum 12V tension and 1A current. On request, depending from working conditions, it is possible to connect up to 4 unit for a simultaneous intervention



Optional: electric actuator
code 00.951E.5080.00

MANUAL CONTROL DEVICE INSTALLATION PROCEDURE

- 1) Place the support (3) as per fig 1 and fix (by screwing) the control device (2) horizontally.
If needed use the spacing washer included in the kit and and/or not blocking glove (Loctite).
- 2) Fix the lever 1 on the control (2).
- 3) Screw the brass adaptor (4) on the support 3 for connection of sheathed steel cable.
- 4) Insert steel cable (5) into holes of brass adaptor (4), support (3) and lever (1).
- 5) Cut cable at exact desired length and fix pull box and handle inside bridge room or close to instrument panel

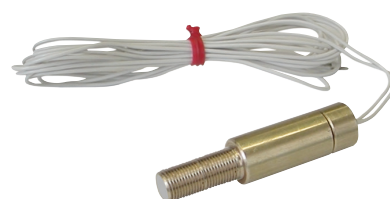


Optional: manual actuator
code 00.951E.5081.00

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



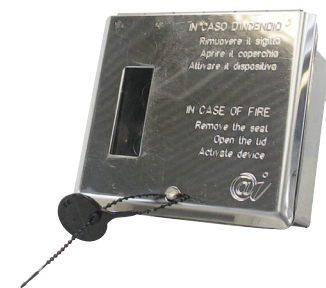
Electric actuator
code 00.951E.5080.00

ACCESSORIES ON REQUEST - EASYFIRE® SYSTEMS

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 extinguisher 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



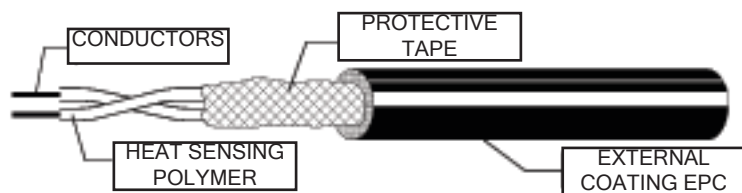
Control box - code 23022

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

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	-



Fixing base for thermocables - code P504.RV.044.00

TEMPERATURE DETECTOR

The apparatus consists of two contacts mounted on two curved strips of nickel-iron, the contacts are electronically isolated from the strips, however, a complex that is called "crew" 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