

**TECHNICAL SPECIFICATIONS FOR
THE AUTONOMOUS FIXED
CONDENSED AEROSOL FIRE
EXTINGUISHING SYSTEM UNITS.**

1. General

1. The total system will be designed, installed and maintained as per below specifications.
2. The Integrator will provide an the appropriate schedule a list of fire extinguishing systems that they have supplied and installed to prove the eligibility to install and maintain the systems.
The Integrator has personnel trained by the manufacturers to design, install, test, and maintain Fire Detection & Extinguishing Systems.
The Integrator is obligated in recharging the auto fire suppression system within 24 hours after a discharge.
The Integrator shall include the supply and installation of all materials, equipment, fixtures & fittings, plant and labor necessary for the completion of the Project.
Tender shall include a warranty of five years Maintenance contract and service agreement with an option to extend for a further 10 years year on year.

3. Fire extinguishing system

Integrator must provide a detailed design of the fire extinguishing system and submit a complete proposal including chemical quantities and any other components that are required for correct operation of the total system i.e. detection, fan shut down and activation of Extinguishing Units *simultaneously* for total flooding of protected Power Factor cabinets or any other Electrical cabinets.

The Integrator should also provide a detailed design of the fire extinguishing system and submit a complete proposal including chemical quantities required for total flooding (gr/kg.), covered area/s (m³), number of extinguishing units or cylinders(pcs), thermo cables and all Fire Extinguishing Control Modules were applicable for a complete Automatic Release System.



2. **Extinguishing Equipment (for each extinguishing Power Factor Unit/Cabinet) :**

2.1. Compliance

Shall be accompanied with various tests from E.U. certified laboratories and CE marking.

2.2 Control of Extinguishing Cabinets.

- a.) The Extinguishing Units shall be AUTOMATIC activation via *Thermo Cable* and battery supply guaranteed 2 years.
- b.) The Extinguishing Units during activation must be capable of turning **OFF** the Electric Fan operated on top of Power Factor Panel during release of Extinguishing Media i.e. Aerosol.
- c.) Total Flooding of *each* Power Factor Cabinet or Electrical Cabinet *must* be given as per above requested quantities.

3. **Aerosol Total Flooding Modular System**

3.1. Chemical Extinguishing Type

Aerosol Extinguishing Agent is suitable for extinguishing fires in occupied Electronic data and Machine rooms. The Aerosol Fire Extinguishing agent is designed for extinguishing fires of solid flammable materials, flammable liquids, machinery and electrical equipment up to 20 KV. The offered extinguishing agent should also be *zero ozone depletion potential, non toxic, no decrease in oxygen levels, no release of dangerous substances during storage and activation, no pressurized metal casing.*

3.2. Chemical Quantity required

Aerosol quantity should be calculated based on the designed concentration proposed by the Chemical manufacturer, in gr/m^3 which should be clearly stated, plus compensation for leakages.

The Integrator can estimate and propose with the tender the Chemical quantities required based on actual dimensions. For the purpose of formulating a common basis for tender, the gross volume of the cabinet should be considered as given.

A written statement of achieved concentration should be provided by the system's Integrator after completion of the installation.

3.3. Discharge Time

Should have a suitable flow rate to allow discharge of agent within the time proposed by the manufacturer (should be specified) and must be within the standard limits mentioned in **NFPA 2010 or EN 15276** which should not exceed **90 seconds**.

3.4. Containers

- a) Containers should be placed high and be securely fitted to the inside of the cabinet.
- b) Containers should be constructed of *metal casing* with protection and anti- rust.
- c) The following tender information **will** be provided for **each** extinguishing cabinet;

Total Number required of Extinguishing Cylinders.

Total Volume (m³) covered for total flooding.

Total Quantity of chemical contained (gr.).

Total mass of each model/type extinguishing Container/s (gr. or kg.).

Extinguishing Agents test results for required extinguishing concentration in gr./ m³

3.5. Chemical information

The following additional information must be available on request :

- a.) Composition.
- b.) Principle of operation.
- c.) Oxygen depletion.
- d.) Toxicity/No Observed Adverse Effect Level (N.O.A.E.L.)
- e.) Global warming potential
- g.) Other useful information.

3.6 Approvals / Certifications

- a.) The Extinguishing Aerosol Generators are to be a HALON alternative and in compliance to the NFPA 2010.
- b.) The manufactures of Aerosol Fire Extinguishing Generators are ISO 9001 Certified, test certification to be supplied only on request.
- c.) Tests results from a European Notified Body or European Accredited Authority reflecting it's efficiency to extinguish fires of Class A, B & E i.e. FPG Aerosol Generators is 100 gr. / m³, test report to be supplied only on request.
- d.) Tests results from a European Notified Body or European Accredited Authority reflecting no significant change of oxygen levels during & after release of Aerosol, test report to be to be supplied only on request.
- e.) Toxicology reports by a European Notified Body or European Accredited Authority to be test report to be supplied only on request.
- f.) Tests results from a European Notified Body or European Accredited Authority reflecting that the Aerosol Fire Extinguishing Generators must NOT self activate at below 250 °C as per EU & International Directives i.e. MSC Circ. 1007 as a safety limit in an idle state, test report to be supplied only on request.

3.7 Technical Characteristics

Concentration in volume (not including corrective factors) :	not more than 100,0 gr./m ³ .
Duration of discharge :	not more than 90 secs.
Aerosol Temperature at 0,3 mtr from Generator outlet :	must not exceed 75°C.
Duration of Effectiveness :	30 -120 min.
Activation Time :	immediately.
Starting methods :	Electrically only.
Operation conditions:	
- temperature range, °C :	- 20 to + 60°C.
- relative humidity at 25 °C :	up to 98 %
Life time, year :	15 years.

Electrical characteristics of the Aerosol Fire Extinguishing Generators :

* minimum starting current :	800 mA.
* monitoring current :	not more than 5 mA.
* duration of impulse or direct current :	not more than 15 sec.

3.8 Physical Characteristics

- The Aerosol Extinguishing agent is **not dangerous** for the human organism.
- The Aerosol Extinguishing agent is **not Toxic**.
- The Aerosol Extinguishing agent is **not Explosive and not flammable under 380°C**.
- After the release of Aerosol extinguishing agent, will **not damage the earth ozone layer**.
- Prevents **re-ignition** after release of extinguishing media.
- The Aerosol Extinguishing agent is **not corrosive** and therefore **does not damage** contents in protected area including computer equipment.
- The Aerosol Extinguishing agent are **not** contained in dangerous **pressurized cylinders**.
- Protects & Extinguishes fire of electrical installations of up to **20,000 Volts i.e. Di-electric**.
- The mass of the Aerosol charge required to extinguish the fire is only **100 gr/m³**.
- Effectively extinguishes fires of **Class A, B & C** (except for spaces were explosive mixture is present).
- Aerosol Generators (Extinguishers) are **not** classified as a **pyrotechnic**.
- **No significant change of oxygen** content in the protected space on and after activation of aerosol extinguishers.
- **Environmentally friendly**.
- **Chemically neutral**.
- The Aerosol Fire Extinguishing Generators have a minimum **5 year Warrantee**.
- Halogen chemicals free (not more than 1%) as a total complete system.

3.9 The Contactor shall be responsible for identifying:

- (a) Openings in cabinets and should be taken in to consideration

4. System's Power Supply

4.1 The activation of Extinguishing Units shall be Lithium battery supplied.

4.2 Battery life

Batteries should have an expected life of 2 years.

Information should be submitted indicating the expected life, conditions considered and required service/maintenance required.

5. Automatic Detection & Extinguishing

Detection & Activation shall be via Thermo Cable.

