IG-541

EXTINGUISHING USING INERT AGENTS

WITH CONSTANT PRESSURE VALVES

GREEN FLOW RG SYSTEMS

RG SYSTEMS™ GREEN FLOW – IG-541 (Ar & N_2 & CO_2) at 2900 & 4350 PSI (200 & 300 BAR) – CONSTANT & CONTROLLED FLOW TECHNOLOGY – COMBI MANIFOLD SYSTEMS (CMS)

MOST DEMANDING AND ENVIRONMENTAL

FRIENDLY PROTECTION

The prevention of fires is a market that every day demands specifically consistent solutions adapted to each design conditioning requirements.

The protection is not confined to action against fire. RG-Systems offers total protection with high performance systems: relevant factors such as functionality, protection of personnel, or aesthetic needs & equipment environmental are some requirements making it stand out over others. For this reason, and to cover a wide variety of requirements, **RG SYSTEMS™ GREEN FLOW – IG-541 (Ar & N_2 & CO_2) at 2900 & 4350 PSI (200 & 300 BAR) – CONSTANT & CONTROLLED FLOW TECHNOLOGY – COMBI MANIFOLD SYSTEMS (CMS)**, is developed, which enhances the known and prominent properties of inert gases thanks to the latest flow rate control technology. It offers all the benefits of these agents with the most innovative equipment, easy installation and adapting to different design criteria, without consideration.

FM APPROVED

UL

VdS

RG SYSTEMS™ GREEN FLOW – IG-541 (Ar & N_2 & CO_2) at 2900 & 4350 PSI (200 & 300 BAR) – CONSTANT & CONTROLLED FLOW TECHNOLOGY – COMBI MANIFOLD SYSTEMS (CMS): HIGH EXTINGUISHER POWER WITH OPTIMUM DISCHARGE CONTROL.

VdS

AGENT ADVANTAGES + ADVANTAGES CFT = RG SYSTEMS™ GREEN FLOW IG-541

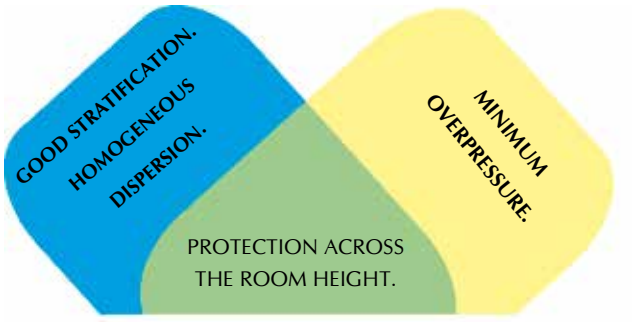
The combined action of the RG SYSTEMS special pneumatic control valve, unique in the market connected to the high efficiency of the inert gas IG-541 provides numerous advantages in all aspects of an installation:

The application is more reliable. Being neutral and working at lower pressure, the equipment does not damage or affect the occupants.

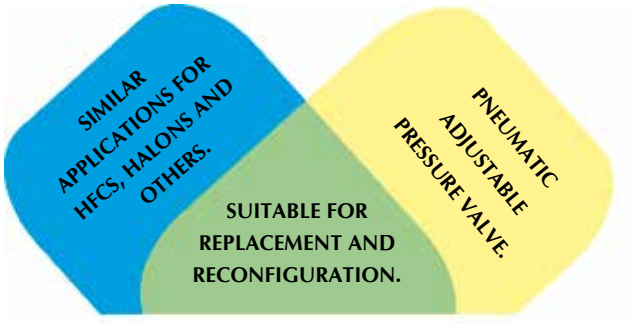
Excellent performance over time and when there are changes (temperature, humidity, light, etc.)

Diameters and pressures are reduced, making the simple, light and manageable installation. In short, overall lower cost.

Faster and cheaper charges.

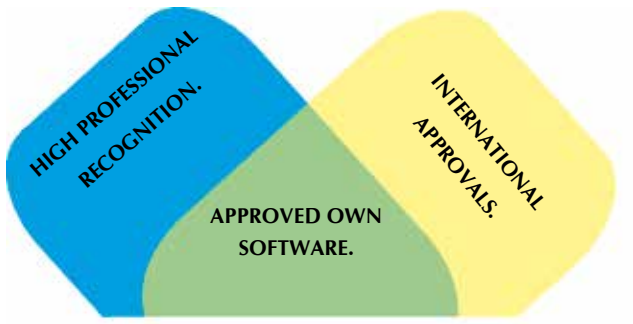


Optimal mix of N2, Ar and CO2 which acts throughout the entire volume of the room, even inaccessible areas, very clogged or with obstacles.



Ecological gas with a wide range of applications.

Allows maintaining the conventional pipe obsolete facilities: it adapts to the required pressure, including low pressure.



It is a widely marketed agent with vast experience of use. It allows full-scale tests.

RG-Systems has certificates and approvals of the most prestigious international bodies.

ADVANTAGES

IN THE INSTALLATION:

Global costs are reduced

Smaller diameter and weights: expedites work

Possibility of low pressure pipe

Optimal for replacing obsolete agents

DURING THE MAINTENANCE:

Without residues immediate resumption after ventilation not requiring cleaning jobs.

Inexpensive and easy to obtain agent

Facilitates the tasks and handling

IN THE FUTURE:

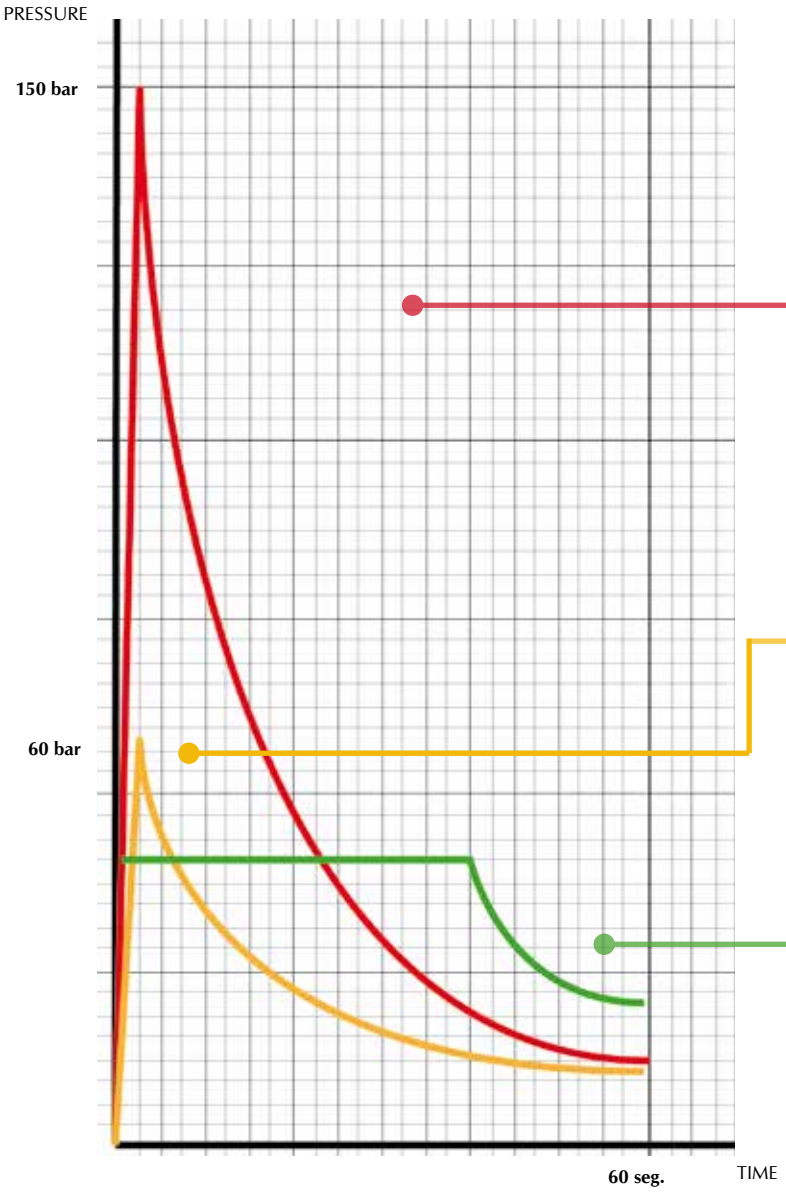
More reliable and durable pneumatic valve than the mechanical devices: less number of errors and better aging

Totally ecological and effective agent: the definitive solution.

The reliability and efficiency of teams using IG-541 is indisputable and widely recognized within the PCI sector. While dealing with naturally occurring agents such as gases in the atmosphere, its preparation is simple (distillation of air) and the storage takes place in seamless cylinder with pressurized gas up to 150, 200 or 300 bar..

Traditionally this storage pressure is transmitted while discharging heavy and expensive components at very high pressure (collectors, accessories). Only after the calibrated restrictor, it is reduced to high pressure (about 60 bar).

RG GREEN FLOW:
TOTAL DISCHARGE CONTROL



The pressure profiles illustrate the differences in the discharge. The released gas being proportional to the area under each graph:

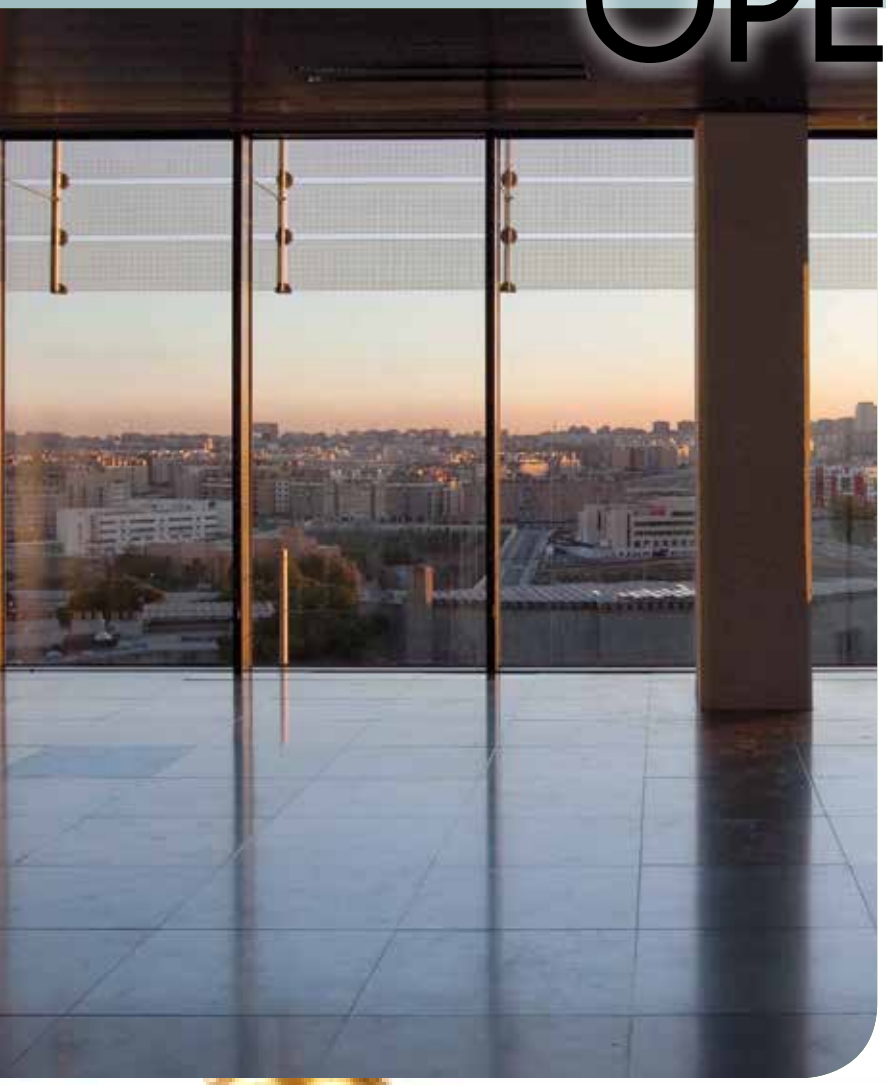
Without pressure regulator, the installation must resist at least 150 bar, with very violent, fast, loud and potentially dangerous discharges due to very high pressure shock or damage.

Restricting devices limit the maximum peak to 60 bar, not avoiding subsequent rapid fall. It is obliged to use high pressure pipeline and dampers of relief.

The pneumatic discharge control allows a rational use of the installation resistance, maintaining a constant release of the agent, with minimum overpressure.

With advanced technology pneumatic control RGS-MAM-DR valves ensure relieving the pressure right from the outlet itself, thus contributing so the **components, pipes and fittings are lighter, economic, and manageable and of a single class, simplifying procurements and assemblies.**

COMPONENTS AND OPERATION



VALVE

The approved valve model RGS-MAM-RD controls and regulates the discharge at the most appropriate pressure required at each facility. Its pneumatic operation minimal maintenance and effective working ensures long, reliable life without disruptions.

It is the safest and most robust in the market, specifically tested to ensure its proper functioning in harsh conditions and after long periods of non use. It's not based upon springs or mechanical procedures of adjustment or may seize over time, so it's completely reliable. It also includes safety devices and pressure control to prevent leakage or accidental shooting.

Exceeds the use of restrictors or other flow control mechanisms - valid but less effective. All required tubing and fittings are of the same type and of smaller diameter, facilitating the assembly work.

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ACTUATORS

RG-Systems has heads of various kinds like electric, manual, pneumatic, pyrotechnic and even combined: electric-manual, pneumatic-manual and even for remote manual activation.

This variety provides great versatility to the equipment, which can be installed with electronic and / or mechanical detection for greater safety detections.

CYLINDERS

They can be configured individually or in batteries, at different storage pressures so that to accommodate the size of the enclosure to be protected.

They are solder less carbon steel, 40, 67, 80 and 140 L capacity, which can be loaded at 150, 200 or 300 bar in order to optimize the storage space.

DETECTION

RG Systems recommends early detection to complement the rapid and effective action of the IG-541 agent.
It can be run together with the central TK, a thermal- mechanical redundant detection system which operates without external energy supply on facing a heat source. It is totally independent and immune to power cuts or explosions.

It can be installed as a simple detection (TK-SIMPLEX: positive on one line) or crossed (TK-COMPLEX: need positive crossed lines), with thermal fuse calibrated at different temperatures of action.

THE AGENT IG-541, HOW IT ACTS.

ADVANTAGES OF ITS USE

The gas is composed of a mixture in optimal proportions of nitrogen, argon and carbon dioxide, with high effectiveness in comparison to other agents without mixing or no gaseous under normal conditions.

This is about the neutral components, non-reactive and very stable, immune to changes in temperature, pressure, humidity, light and does not alter or generate waste on interacting with fire.

The extinguishing mechanism is the separation of oxidizer (atmospheric oxygen) and fuel source of the fire. Being a pressurized gas it reduces the temperature of the room on expanding.

It is suitable for areas occupied since the concentration of oxygen during and after discharge is sufficient and safe for the present staff (NOAEL above 12% O2), no adverse effects observed.

- *NATURAL*
- *SUITABLE FOR OCCUPIED AREAS*
- *GOOD ESTRATIFICATION*
- *HIGH EFECTIVITY*
- *MANY APPLICATIONS*


CONTROL ROOMS
TELECOMMUNICATIONS
HOSPITALS
ELECTRICAL BOARD AND SUBSTATIONS
RAISED FLOORS AND CEILINGS
COMPUTER ROOMS
ARCHIVES AND LIBRARIES
MUSEUMS AND ART GALLERIES
PETROCHEMICAL PLANTS
LABORATORIES

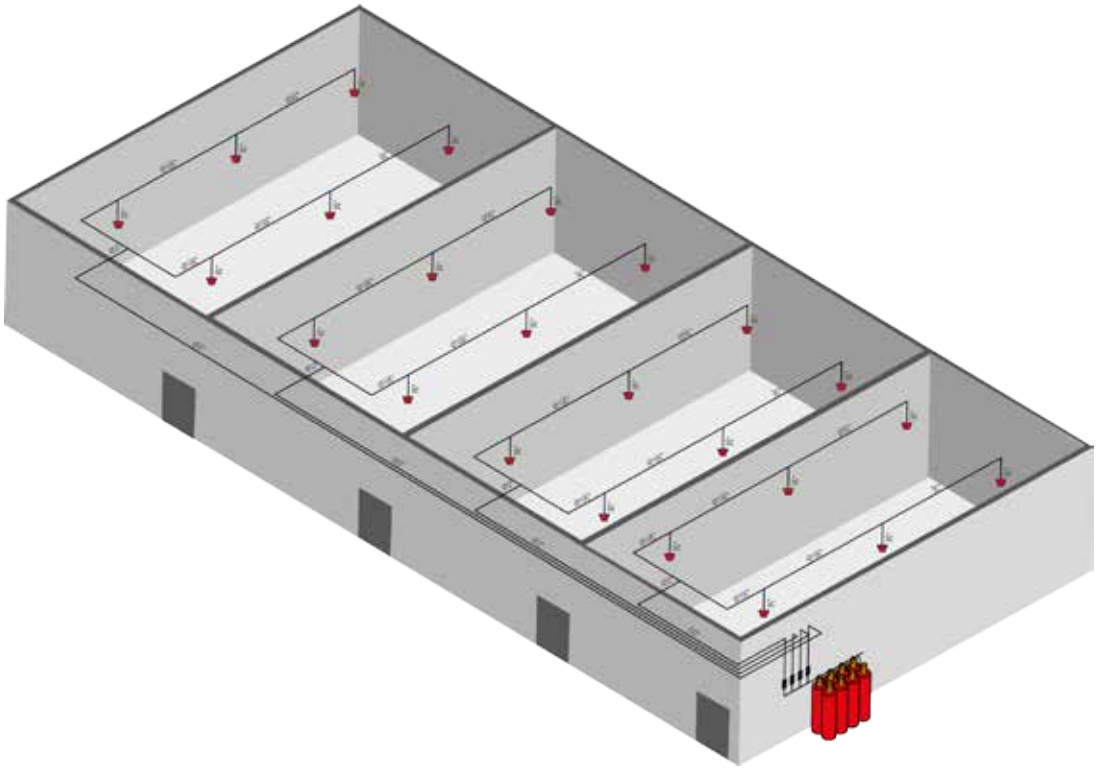
COMPARATIVE

PRACTICAL EXAMPLE:
REDUCTION OF PIPING DIAMETERS IN A CENTRALIZED FACILITY

For the protection of the workshops and storage areas in an antique art gallery, IG-541 is valued for its excellent inerting capability, as well as its lack of chemical reactivity or generation of any byproducts that might damage these valuable artworks.

Thanks to the RG SYSTEMS™ GREEN FLOW Constant & Controlled Flow Technology system, piping can be reduced to two diameters, but foremost among its benefits is the fact that the system allows for a controlled discharge using minimum overpressure to avoid any damage.

Joint action with the IG-541 agent facilitates dispersion over the entire height range, acting to control fire in false ceilings or high areas, middle and lower zones, and raised or false floors. Meanwhile, the stellar effectiveness of our hardware means that an RG system conformant with UL / FM uses less agent to achieve a more uniform and effective discharge, **demonstrated in trials with independent laboratories**.



The combined use of the RG SYSTEMS™ GREEN FLOW Constant & Controlled Flow Technology system with the Combi Manifold System (CMS) **allows for optimized and intelligent use of the overall firefighting installation: less agent, smaller pipe diameters and reduced overpressure (lower venting area).**
Altogether, this solution results in a more compact, effective and safe system, completely harmless to people, goods and equipment.

FACILITY: museum storage
HAZARD CLASS: Class A solid fire
DIMENSIONS: 15,00 x 6,00 m. H = 5,00 m.
DESIGN CONCENTRATION: 33,23%*
AGENT IG-541 REQUIRED: 181.80 m^3

** RG GREEN SYSTEMS design concentration as per NFPA, according to UL / FM approvals*

	IG-541 with restrictor	RG SYSTEMS™ GREEN FLOW IG-541
Agent loading	182.80 m^3	182.80 m^3
Equipment	8 cyl. de 80 L, 300 bar	8 cyl. de 80 L, 300 bar
Pipe used	SCH 80 Accessories 3.000 lbs	SCH 40 Accessories 600 lbs
Maximum diameter	Ø 2"	Ø 2 1/2 "
P_{max} pipe network	60 bar	41 bar
Manifold	2.580mm	Combi Manifold System: 300 mm
GWP	0 PCA/m^3	0 PCA/m^3

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WARRANTY IN ALL OF OUR PRODUCTS

SPEEDY AND EFFICIENT PROJECT TURN-AROUND

COMPETITIVE MARKET PRICING