

IG-55

EXTINGUISHING
USING
INERT
AGENTS

WITH CONSTANT
PRESSURE VALVES



RG SYSTEMS™ GREEN FLOW – IG-55 (Ar & N₂) at 2900 & 4350 PSI (200 & 300 BAR) –
CONSTANT & CONTROLLED FLOW TECHNOLOGY – COMBI MANIFOLD SYSTEMS (CMS)



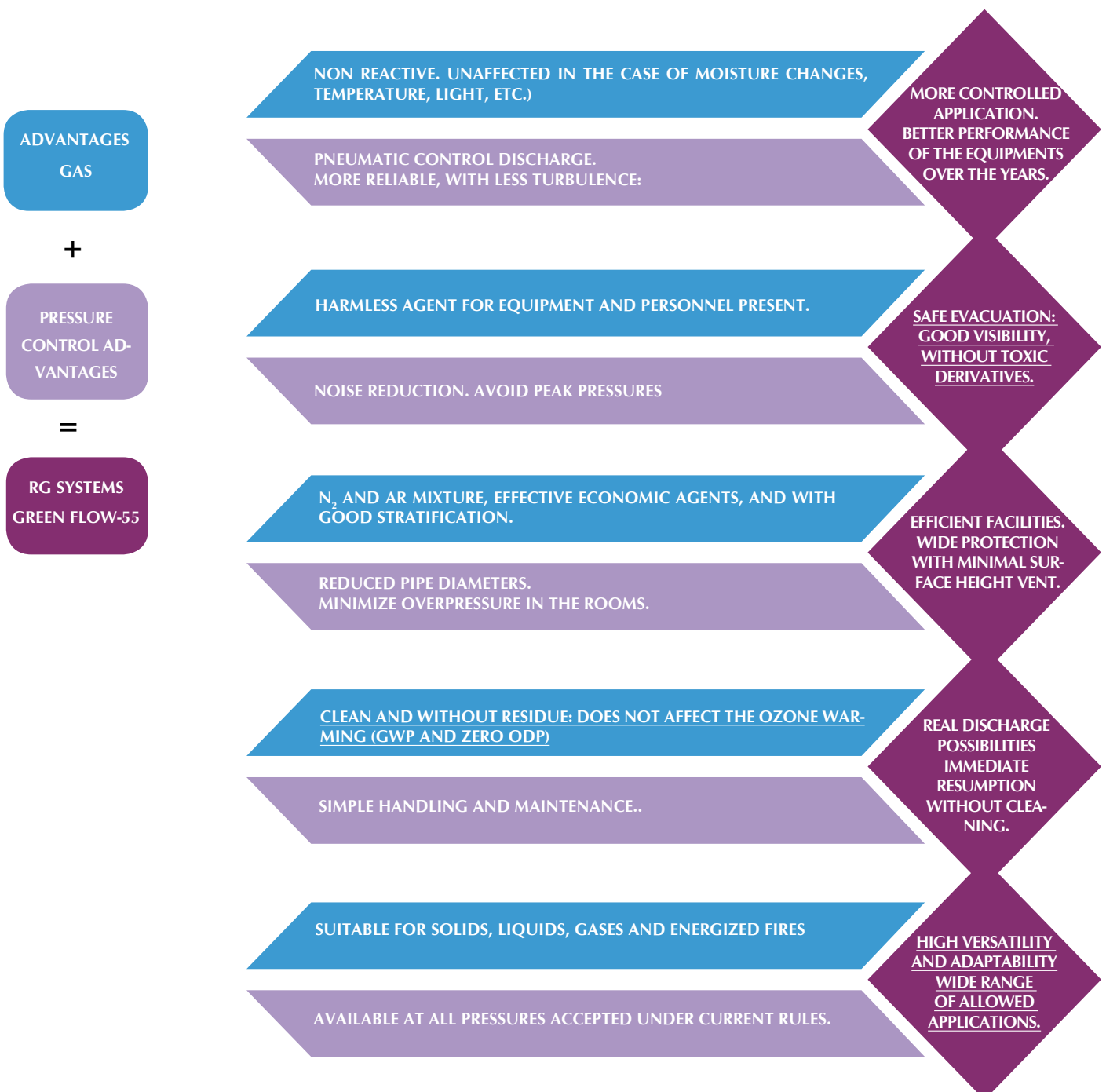
Protection against fire has in the inert gases some allies that combine adaptability to each requirement with a proven effective defence and friendly with the environment.

The companies, institutions and even individuals, have a need to protect certain property against the destructive effects of a possible fire.

The rapid extinction of the fire is essential. If what is being stored has also added value derived from its function or content, in which case, the affect-

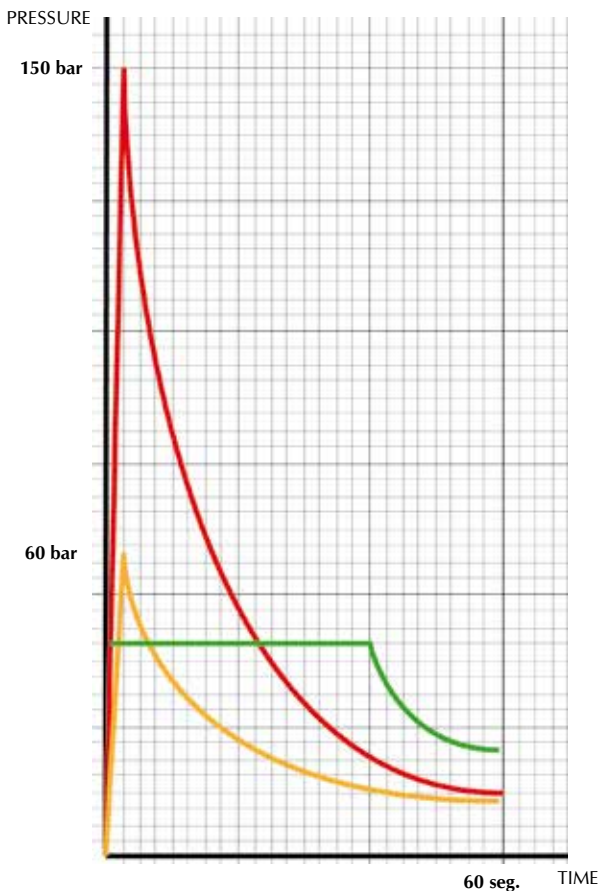
tion may severely condition its viability and positioning, resulting from the temporary interruption up to the definitive cessation of activities. In order to meet this demand, fixed RG SYSTEM-STM GREEN FLOW CONSTANT & CONTROLLED FLOW TECHNOLOGY – COMBI MANIFOLD SYSTEMS (CMS) extinguishing systems with clean and ecological agents are developed that make possible the continued protection of equipment and occupants. It is further adapted to the problems of each project, at the same time not polluting and respectful of the planet.

RG SYSTEMS unites the effectiveness of IG-55 mixed with the advanced technology and robust pneumatic control valve discharge. The objective: to provide customers with the most economic, ecological and technically adequate solution.



TOTAL DISCHARGE

CONTROL



The reliability and efficiency of teams using IG-55 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 to 150, 200 or 300 bar.

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

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.

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.

**RG SYSTEMS™ GREEN FLOW – IG-55
(AR & N₂) AT 2900 & 4350 PSI (200 &
300 BAR) – CONSTANT & CONTROLLED
FLOW TECHNOLOGY – COMBI
MANIFOLD SYSTEMS (CMS)**

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



RG SYSTEMS VALVES: the only adjustable in the market

adjusts to the outlet
pressure required for
each project.

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

- Facilitates the tasks and handling
- Inexpensive and easy to obtain agent
- Without residues immediate resumption after ventilation without cleaning jobs.

IN THE FUTURE

- Totally ecological and effective agent: the definitive solution.
- More reliable and durable pneumatic valve than the mechanical devices: less number of errors and better aging.

COMPONENTS

THE CYLINDERS

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.

The pressures of 150 and 200 bar are the most widely used globally and ensure compatibility with the facilities and maintenance or recharging equipment of any country. The working pressure of 300 bar provides more compact devices.

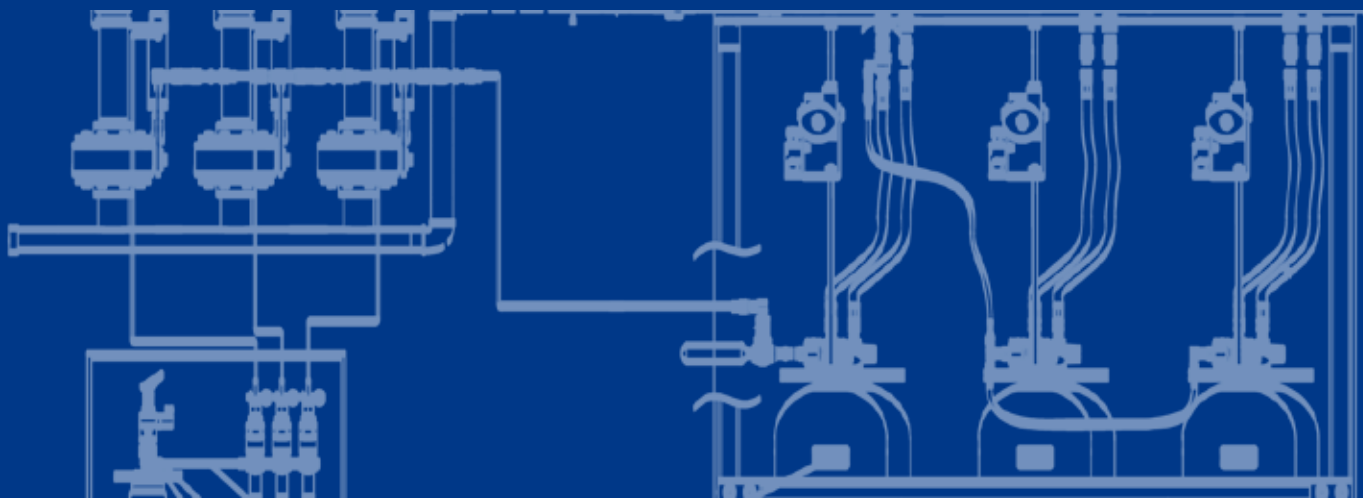


THE VALVE

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

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 reliability. 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.



OPTIMIZATION OF THE DEVICES

DIRECTIONAL VALVES

Reduces the installation and make it cheaper, by simultaneously protecting several areas with the same battery. Each room has its own directional valve, which operates only the precise bottles for such protection.

RESERVE SYSTEMS

These guarantee uninterrupted protection during maintenance of major equipment or in face of new threats. Highly recommendable option in facilities of high value or the one that include directional valves.

SAFETY

RG-Systems provides the widest range of security and control devices in the market. To protect both the integrity of site as well as the health of its occupants, you can count on it.

PNEUMATIC RETARDANT AGENTS

Before the start of a discharge they enable the safe evacuation of the personnel present. They are directly or indirectly acting and act accordingly on the master cylinder or bottle, respectively.

PNEUMATIC SIRENS

They alert before an imminent shock. They are automatic and autonomous activation type.

PRESSURE RELIEF DAMPERS

Structural damage due to excessive pressure during the release of the agent is avoided, allowing the exit of displaced air and then sealing for maintaining watertightness.



THE IG-55 AGENT, HOW IT ACTS. ADVANTAGES OF ITS USE

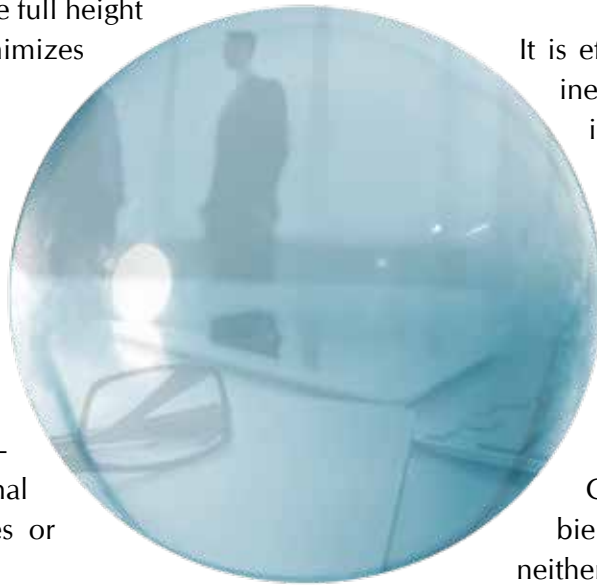
The mixture that composes the IG-55 agent is a combination of molecular nitrogen and argon to 50%, which has unique properties to optimize its action: the stratification of agents in levels (argon in the lower part and nitrogen above) gives comprehensive protection in the full height of the enclosure and minimizes the effect of the leaks.

The application of pressurized gas advantageously affects the extinguishing efficiency: the gases are very miscible with each other, whereby the concentration is homogeneous. Moreover, the pressure ensures tridimensional action across the obstacles or cable shields.

It allows coordinating an effective response to the fire with the flexibility of design, configuration of

equipment and protection of present personnel before the operating requirements.

It is versatile, as it enables the protection of a large number of hazards throughout its height with the help of the mix of agents.



It is effective and safe, with good inertization capacity. Does not interact with the devices: its neutral nature limits its action up to extinguishing of the fire. It's compatible with the usual building materials and offers every guarantee in the event of an evacuation.

On removing from the ambient air, it is ECOLOGICAL: neither deteriorate the ozone layer (ODP) nor produce warming (GWP). At the same time, it is clean and does not generate waste, and is recommended for delicate items.



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 : GREAT ROOM HEIGHT

Designs for the protection of electrical equipment rooms (an energized fire hazard) can be done comprehensively by considering the recharging, environmental, performance (cost/benefit), maintenance, security and additional component costs vs. potential future costs.

In this case, IG-55 inert gas was chosen for its excellent performance in protecting high-ceilinged rooms, with a density similar to air, and capable of protecting both upper and lower areas. In addition, owing to the nature of the facility, the use of conventional diffusers is complicated by the various levels that must be installed.

The high performance of the RG SYSTEMS™ GREEN FLOW Constant & Controlled Flow Technology system with IG-55 is based on its greater coverage over the entire height of the room thanks to its stratification, as well as its high penetration capabilities for electrical equipment under minimal overpressures.

Its low cost and ease of dispersion lead to considerable savings, with the added possibilities of being able to test actual discharge and use minimum pipe diameters, thanks to our discharge control.

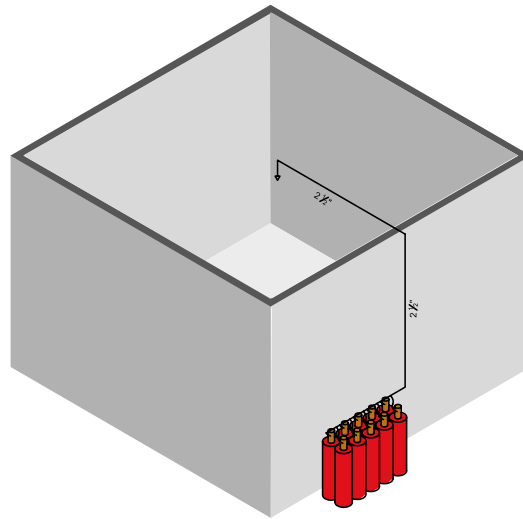
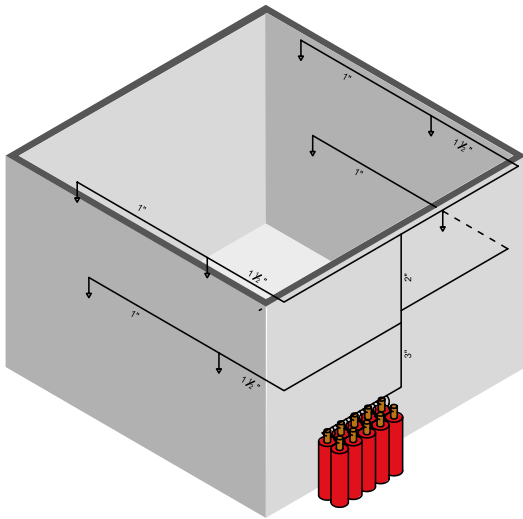
From the environmental point of view, its non-existent GWP footprint ensures safe, carbon tax and restriction-free operation, now and in the future.

The system also allows continuous monitoring via a simple switch or pressure gauge with contacts and, thanks to our UL / FM approvals, the design concentration is reduced by the increased effectiveness of our equipment.



FACILITY: Sala eléctrica de gran altura
HAZARD CLASS: Class C powered fire
DIMENSIONS: 10.00 x 10.00 m. H=7.00 m
PIPE : SCH80
DESIGN CONCENTRATION: 41.59%*
AGENT IG-55 REQUIRED : 376.60 m³

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



	HFC-23	RG Green Flow IG-55
Agent loading	404 Kg	391.00 m ³
Equipment	4 cyl. 120 L	10 cyl. 140 L @ 300 bar
Pipe used	SCH 80	SCH 80
Maximum diameter	3"	Ø 2 1/2"
P _{max} pipe network	60 bar	50 bar
Cost of agent (recharge)	13.100 €	1.900 €
GWP	12.000 PCA/kg	0 PCA/m ³

Electrical equipment rooms present the same fire hazard throughout their volume. The IG-55 agent is optimal for both high and low-lying areas, with a powerful reach capable of overcoming even densely packed areas and blockages that would hinder the action of other extinguishing agents.

Producing no residual waste, the gas is dissipated by merely ventilating the area, does not damage delicate electrical equipment, nor does it require subsequent work stoppages for cleanup. Immediate resumption of productive activity is critical to ensuring business continuity.

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