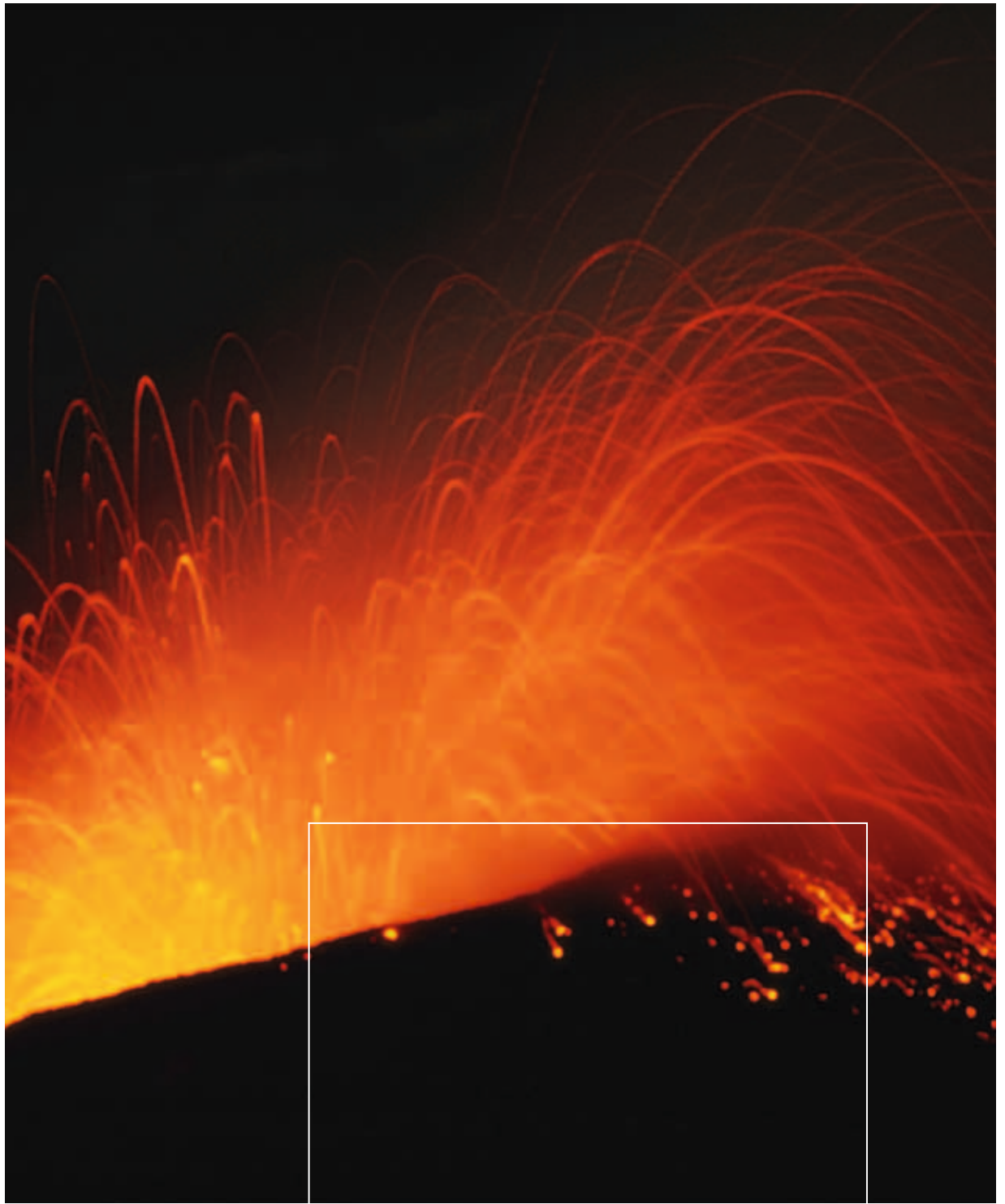
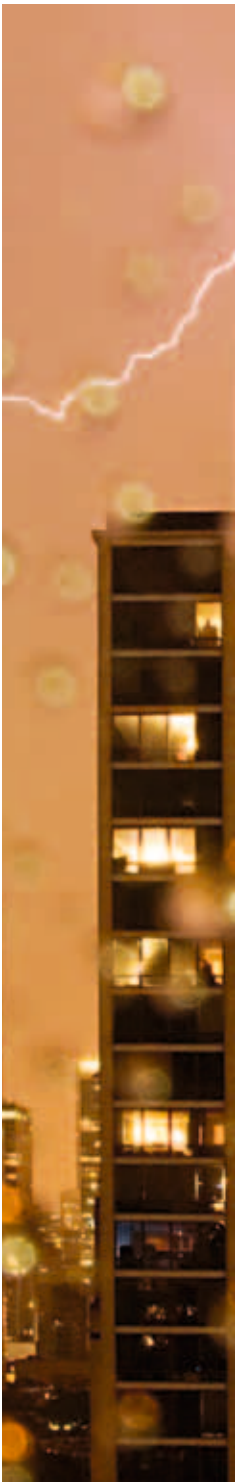


Safety relieves tension.

**BELIMO**<sup>®</sup>



Nature is just as fascinating as it is destructive. On the one hand, it gives life and heat, but on the other hand the forces it is capable of unleashing can pose both a threat to humans and cause considerable damage. Using our know-how as a leading manufacturer of electrical direct coupled actuators and motorised valves, we have committed ourselves to providing effective personal and unit protection for more than 30 years. Our sophisticated Fail-Safe Solutions provide you with safety that is adapted exactly to your needs, whether for air-conditioned buildings, trains, ships, tunnels, animal husbandry, greenhouses or timber drying systems.



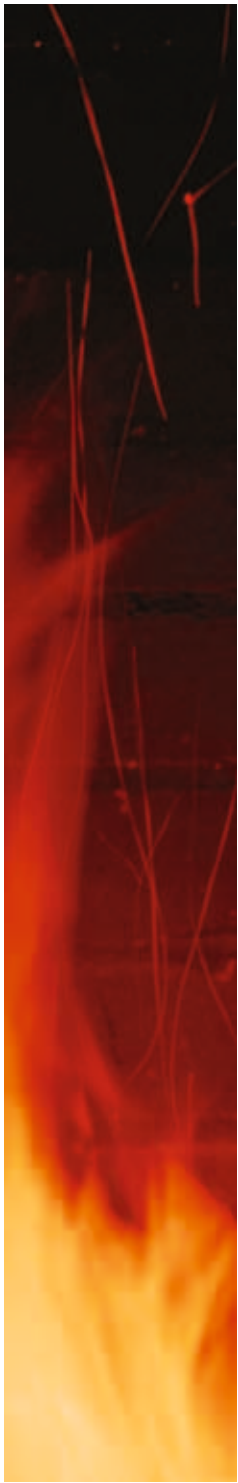
Fail-Safe Solutions from Belimo.  
Responsible protection for people  
and tangible assets.



In an emergency, effective protection against fire and smoke saves lives and helps to minimise damage to buildings and tangible assets. As a responsible investor, planning engineer or facility manager, you should ensure that your fire protection and smoke control dampers are motorised with the specially developed Belimo actuators that have been proven the world over. A graded product range of complete solutions is available to control and monitor the actuators.



Safety takes pressure off.  
Reliable fire and smoke protection  
from Belimo.



To prevent the spread of fire and smoke through the ventilation ducts, motorised fire dampers are installed in the fire compartments. In an emergency, they close automatically and seal off the area. Controlled by a smoke detector, they trigger early enough to prevent the transfer of cold smoke. The dampers' remote-controlled performance check cuts the operating costs. You can shut off unused compartments at night or if the ventilation system is switched off, which enables significant energy savings.

We introduced the first fire damper actuator in 1977 and have been continually perfecting it ever since. Belimo's years of practical experience have enabled it to develop into a world-renowned fire protection specialist.

# Motorised fire protection. Perfected by the inventor.



## **Enormously resistant**

Belimo actuators for fire and smoke protection dampers were developed specifically for these applications and satisfy the most stringent quality requirements. Their outstanding robustness and complete reliability ensure that the fire dampers they are fitted in satisfy all standards and guidelines in this area with ease.

## **No compromise on reliability**

Fire protection actuators have to securely close the damper in an emergency and keep it closed while the fire is burning. This places particular requirements on their design. High-quality steel parts, robust spring return packages, form-fit connections and special thermal tripping devices ensure zero-compromise on safety in a fire.

## **Safe thanks to simple monitoring**

Graded complete solutions to control and monitor fire dampers help to increase planning reliability during project planning while optimising investment costs. They are simple to operate, provide maximum operation and maintenance protection, are extremely flexible and offer impressive cost-effectiveness.



Experience with fire catastrophes has shown that smoke and toxic fumes pose the greatest threat to human safety. Motorised smoke control dampers from Belimo used in conjunction with mechanical smoke extraction systems significantly reduce these risks. Escape and emergency routes remain smoke-free, the extremely dangerous phenomenon of flash-over is prevented or delayed, and firefighting and rescue work is made much easier.



Mechanical smoke extraction systems with motorised smoke control dampers save lives in the event of fire. Tested and approved actuators and flexible complete solutions from Belimo also play a key role in protecting people in buildings.

# Efficient smoke control. Technology that saves lives.



## Smoke-free escape routes

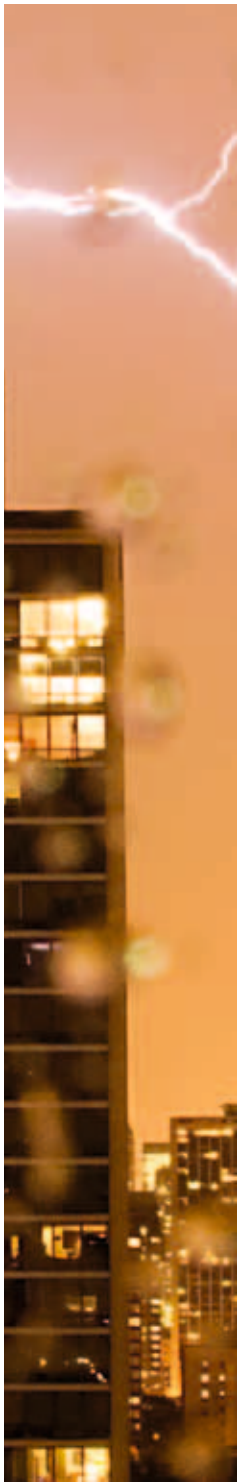
Keeping escape and emergency routes smoke-free is a top priority in the event of fire. Mechanical smoke control units with motorised dampers effectively extract the smoke and toxic fumes outside. This allows people to be rescued from the danger zone quickly and makes it easier for the firefighters to reach the source of the fire.

## Tested units

Smoke control dampers and actuators have to satisfy the most stringent requirements to ensure that they fulfil their safety tasks reliably in an emergency. They are therefore carefully coordinated with one another and are only supplied as certified units. Depending on their smoke control concept, they may have to work for more than 25 minutes in a fire.

## Practical system solutions

Belimo also offers graded complete solutions to control and monitor smoke control dampers. Because they make planning, installation and operation much easier, they contribute significantly to the acceptance of mechanical smoke extraction systems and therefore significantly improved personal protection.



Ice, water and steam can often cause irritating downtimes in ventilation, heating and cooling circuits, which results in expensive damage. Belimo actuators with mechanical and electrical emergency control functions use proven and innovative technologies to ensure that your facilities are effectively protected from such occurrences and unnecessary energy losses.



Safety gives peace of mind.  
Extensive facility and  
investment protection.



The spring return actuators were developed for various requirements and enable the most economically sound motorisation solution for each application. The built-in mechanical spring return package immediately moves the controlled device into the required emergency control position when necessary. At the same time, valve actuators with electrically-controlled override functions effectively protect the heating coil from expensive frost damage.

The legendary spring return actuators from Belimo ensure that dampers and valves reliably move into the pre-defined emergency position even in the event of a power failure. A new generation of products is now expanding the range of possible applications.

# Effective facility protection. Reliability as a top priority.



## **Robust and powerful**

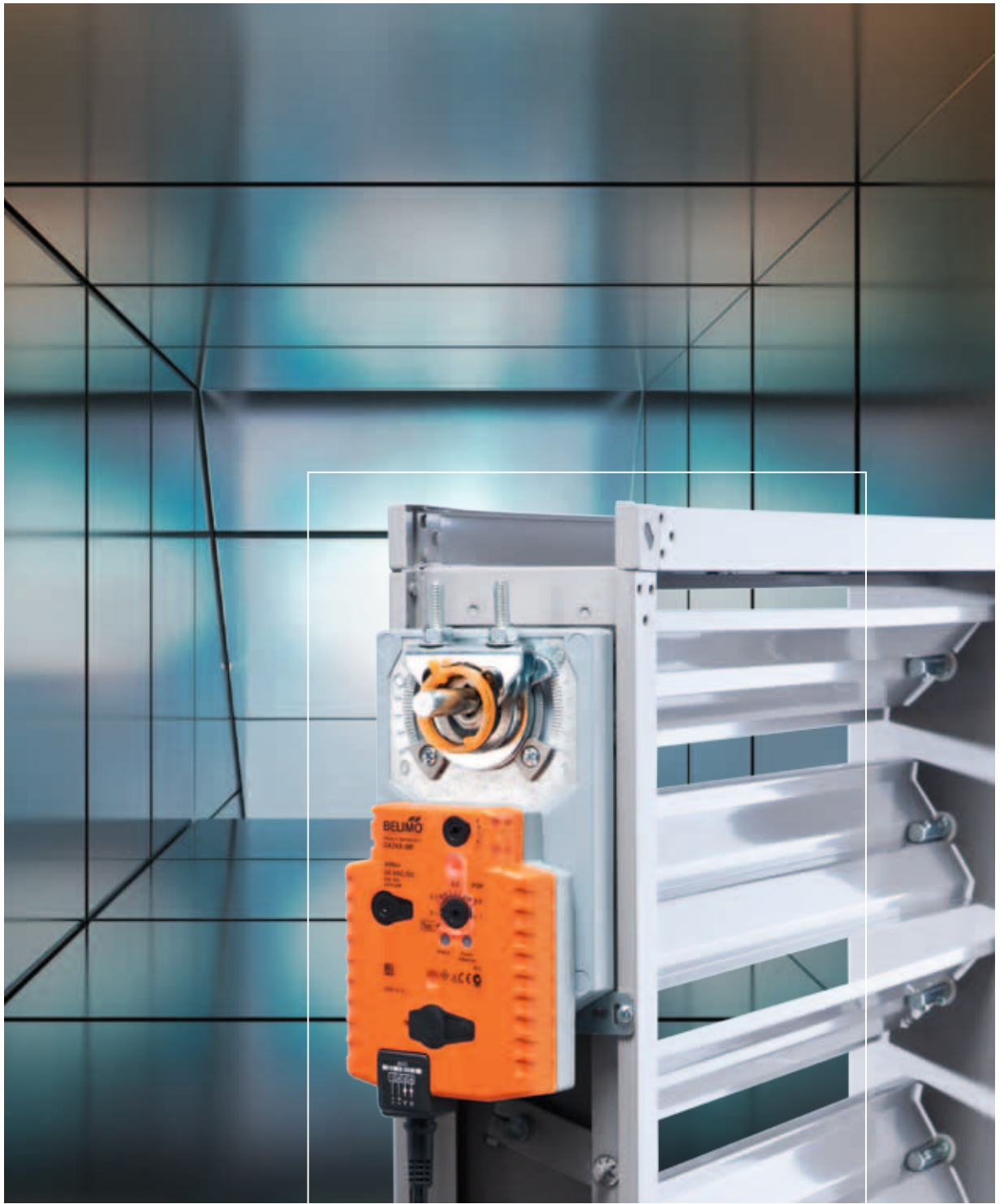
Two ultrasonically welded housing shells reinforced with steel plates and hollow pillars provide the spring return actuators with seal integrity and stability. Powerful turning and holding torques and practical additional functions provide maximum protection in air and water circuits – both in standard operation and in emergency situations.

## **Appropriate override**

To protect the plant from damage at temperatures below 3°C, frost protection monitors trigger the fan switch-off and the external air dampers are closed using the spring return actuators. Actuators with an electronic override function open the valves to the heating coil at the same time and therefore protect them from damage.

## **Standardised philosophy**

As with all new-generation Belimo actuators, there are also standardised accessories (electrical and mechanical) available in this segment. The consistent operating philosophy makes installation, wiring and commissioning easier. With parameterisable and bus-capable types, the actuators can also be adapted precisely to requirements.



The unique rotary, fast-running and linear actuators with the «Controlled Power Off» function open up new possibilities in unit protection. Their pioneering SuperCap Management provides reliable, controlled supply and discharge of the SuperCaps. The emergency control functions can be customised. This avoids unnecessary and expensive downtimes and inconvenience.

Belimo is the first supplier to focus on pioneering, patented SuperCap Management, which allows the safety functions to be customised according to requirements. This improves functionality, convenience and profitability.

# Ingenious investment protection. Designed for the toughest tasks.



## **Extended emergency function**

Innovative SuperCaps supply the actuators with sufficient power during emergency situations to bridge short supply interruptions («Controlled Power Off» function) and to move the dampers or valves into a pre-defined emergency control position from 0 to 100%. In standby or holdover mode, the power consumption is also significantly reduced.

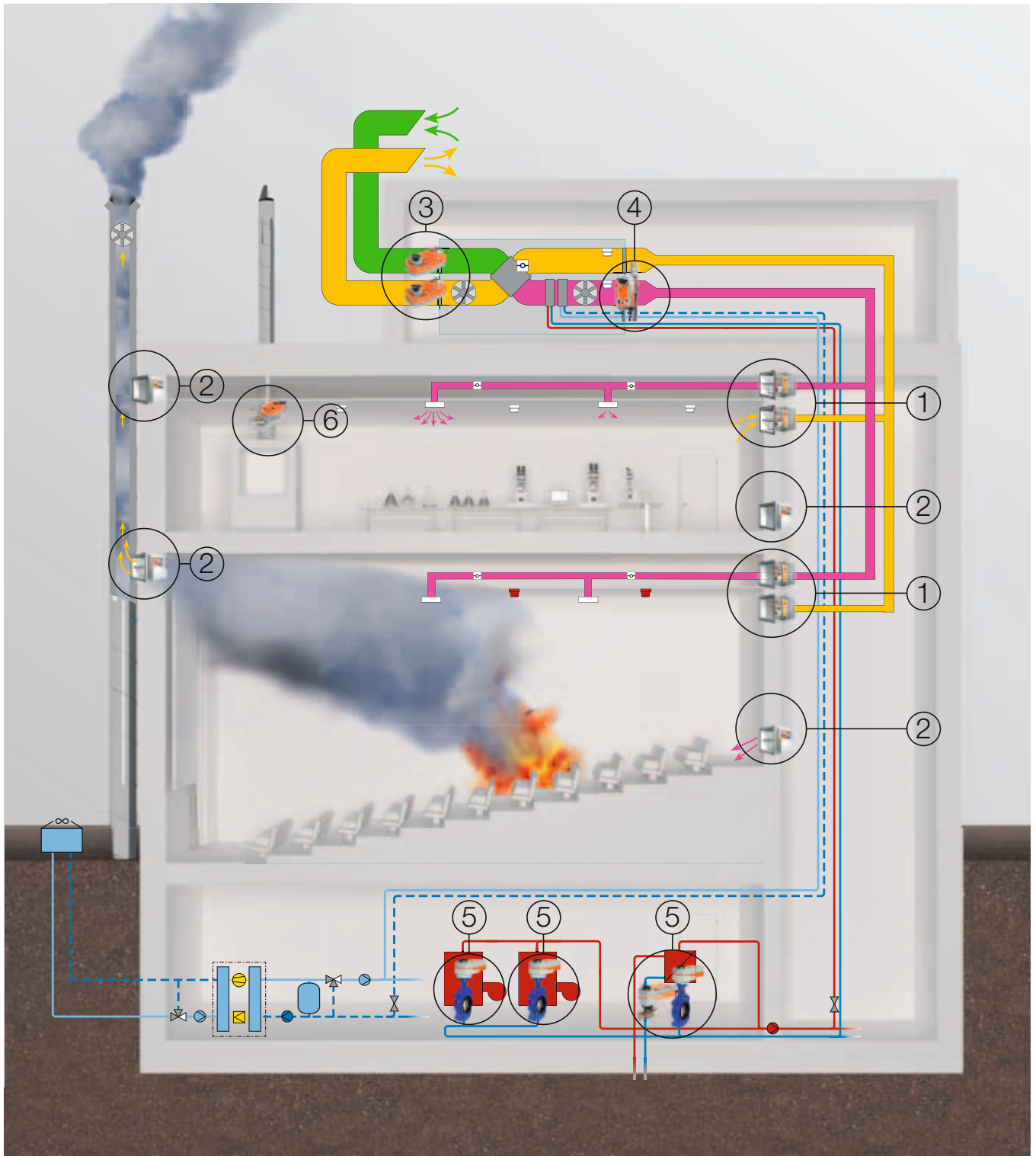
## **Pioneering technology**

This pioneering actuator technology was put through its paces by Belimo under the toughest conditions. Adjustable running times and emergency control positions, a very high positioning accuracy, extremely short SuperCap charging times and an extremely powerful holding torque ensure maximum safety of operation and further improve unit protection.

## **Maintenance-free, simple handling**

SuperCap actuators are maintenance-free and are designed for a long service life. They are operated in the same way as all of the other new-generation actuators and have the same accessories (electrical and mechanical). The entire unit can therefore be operated using a standardised philosophy, which minimises expensive incorrect manipulation. This cuts costs and protects your investments.

# Fail-Safe Solutions from Belimo. Efficient protection on all levels.







①



### Example 1: Sealing-off of fire compartments

If a smoke alarm is set off, the fire alarm system interrupts the power supply to the fire protection actuators. The fire dampers are closed by the spring return mechanism and the fire compartment is sealed off reliably. Fire and smoke are prevented from spreading to other parts of the building.



②



### Example 2: Smoke extraction from fire zones

If smoke is detected in the building, the fire alarm system sets all smoke control dampers in the fire zone to the «open» position and starts up the smoke extraction fan. The smoke control dampers in all neighbouring zones remain closed. Toxic fumes are reliably evacuated.



③



### Example 3: Frost protection in air handling units

If the supply air temperature falls below 3°C, the frost thermostat is tripped. The fans are switched off, the external air dampers are closed by the spring return actuators and the valve to the heating coil is positively opened.



④



### Example 4: Emergency control function for humidifiers

In an emergency situation, the hydrostat interrupts the power supply to the valve actuator. The valve is automatically closed by the built-in spring return mechanism.



⑤



### Example 5: Protection against energy losses in boiler sequence systems

The heat generators can be switched on or off as required. To prevent unnecessary energy losses, they can also be shut off – for example, by means of butterfly valves motorised with spring return actuators.





⑥



### Example 6: Unit protection in sensitive working areas

In case of a fault, the SuperCap actuator is opened or closed to a defined position between 0 and 100%. If the power is only interrupted for a short period, the SuperCap actuator continues to work normally with its stored energy. Downtimes are avoided and the fault is handled efficiently by the building management system.

# Fire protection and smoke control actuators for personal protection.


<b>Potential dangers</b>				
<b>Safety objectives</b>		<ul style="list-style-type: none"> <li>• To seal off the fire zone</li> <li>• To protect lives</li> <li>• To support rescue and firefighting work</li> </ul>		
<b>Solutions</b>	<b>Fire and smoke protection damper actuators with spring return</b>	<b>Smoke control damper actuators</b>		
<b>Protective functions</b>	Automatic triggering of fire dampers using sensors (smoke and temperature)	Escape and emergency routes are kept smoke-free		
	Fire and fumes prevented from spreading through the ventilation ducts	Smoke extraction from rooms and zones affected by fire		
<b>Application fields</b>	Heating, ventilation and air-conditioning systems	Mechanical smoke extraction systems		
<b>Assortment</b>	Complete motorisation solutions with actuator, communication and power supply units and tripping devices	Complete motorisation solutions with actuator, communication and power supply units		
	Graded complete solutions to control and monitor fire dampers	Graded complete solutions to control and monitor smoke control units		
<b>Features and benefits of use</b>	Early closing of dampers prevents the spread of cold smoke	Escape and emergency routes are kept smoke-free		
	Simple, remote-controlled performance check	Delay or prevention of flashover		
	Sealing-off at night if the ventilation system is switched off	Supports firefighting and rescue work		
	Energy savings thanks to sealing-off of unused zones			


# Emergency control actuators for unit protection.

<b>Potential dangers</b>			
<b>Safety objectives</b>	<ul style="list-style-type: none"> <li>• To avoid plant damage</li> <li>• To minimise downtimes</li> <li>• To maintain convenience</li> </ul>		
<b>Solutions</b>	<b>Spring return actuators with emergency control or override function</b>	<b>SuperCap actuators with extended emergency control function</b>	
<b>Protective functions</b>	Sealing-off of the unit parts behind by closing the dampers and valves	Controlled start-up of a pre-defined emergency control position	
	Automatic triggering of the emergency position during supply interruptions	Bridging of voltage interruptions of up to 10 s	
<b>Application fields</b>	Power plant and air handling units	Power plant and air handling units	
<b>Assortment</b>	Rotary actuators for air dampers	Rotary actuators for air dampers	
	Valve actuators with override function	Fast-running rotary actuators for air dampers	
	Motorised characterised control valves and butterfly valves with rotary actuators	Linear actuators for air dampers	Motorised characterised control valves and butterfly valves with rotary and fast-running actuators
<b>Features and benefits of use</b>	Automatic closing in the event of voltage interruptions	Individually adjustable emergency control positions of 0 to 100%	
	Powerful turning and holding torques	Extremely powerful holding torque	
	Reinforced, well engineered housing	Durable double-layer capacitors with short charge time	
	Simple performance check	Reduced current in stand-by operation	
	Maintenance-free	Direction of rotation and stroke of emergency control position can be changed without disassembly	




 5 year warranty

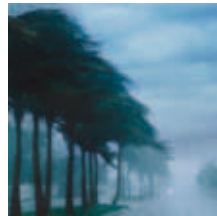
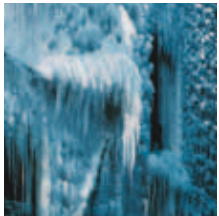
 On site around the globe

 A complete range of products from one source

 Tested quality

 Short delivery times

 Comprehensive support



# Fail-Safe Solutions.

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