

New Belimo actuators for fire safety and smoke extraction:

Safety First

From the very first day of its existence Belimo has been making constant efforts to improve safety for the occupants of air-conditioned buildings. That is why the company's range of products for fire protection and smoke extraction is constantly being expanded and updated. The latest developments in this field are a compact spring-return actuator for small fire dampers and a new design approach to the problem of smoke extraction.

As the complexity of modern air-conditioned buildings grows - but also as a result of the experience gained from catastrophic fires in the past - there is a clear need for effective protection for the buildings' occupants and for valuable interiors and contents.

The right size of actuator for large and small fire dampers

Reliable methods of preventing the spread of fire and smoke through a building's ventilation system are an absolute necessity. In the event of fire the job of the fire and smoke dampers is to isolate the different parts of the building into separate fire zones. In order for this to be done efficiently it is desirable for the dampers to be motorised for, in contrast to conventional mechanical trips, electric actuators can be controlled from a central point and also be incorporated into higher-level monitoring systems.

Belimo is the only manufacturer to offer a range of extra-robust fire protection actuators in various sizes and power ratings. In addition to the well-proven and powerful BF and BFG series for medium and large fire dampers in the main ventilation systems of buildings, the Belimo range has recently been expanded to include the new compact BLF actuator. These particular actuators have been designed specifically to allow the low-cost motorization of the smaller safety dampers that are normally found in the terminal control parts of systems. A typical example of their use is to provide extra protection for rooms housing costly equipment such as computers, telecomms, production machinery, laboratory apparatus, stocks of materials, etc.



Legend:

The new BLF-actuator for small fire dampers

All components of the BLF actuators with a function relevant to safety are made of special heat-resistant steel. In the event of a power failure it takes only a few seconds for a robust spring assembly to close the damper and, afterwards, to press hard on it to ensure absolutely tight sealing. The connection between the core of the spring and the form-fit spindle driver is fireproof. Thanks to these features the units conform to the stringent fire safety requirements of DIN 4102.

Like all Belimo actuators, the new BLF types also offer tremendous functionality. Not only can they be incorporated into higher-level monitoring systems very simply and easily but can also be controlled by smoke alarms. If necessary, too, they can be equipped with a thermoelectric

tripping device and with special connectors for linking to the Belimo SBS-Control fire-protection monitoring system.

Best protection for occupants thanks to effective smoke extraction

The experience of catastrophic building fires in the past has shown that it is the smoke and the gases generated by the fire itself that represent the greatest danger to the occupants. This is why it is so important to employ a total concept of fire protection and smoke extraction and why today's more complex buildings, such as shopping centres, hospitals, airports, etc., are being equipped with specially-designed smoke extraction systems in addition to the normal fire dampers. In an emergency such systems are able to remove large amounts of smoke and poisonous gases and so keep escape routes for the occupants open and access routes for fire-fighters clear.



Legend:

A typical fire-protection and smoke-extraction installation

The most important aspect of any smoke extraction system is that it should employ suitable dampers. In turn, their most important feature is that, depending on the particular application, they should have either one safe position "Open" or two safe positions "Open" and "Closed". It must also be possible for the dampers to be opened or closed very rapidly - even while the system is actually working.

Motorization and control of smoke extraction dampers

Working closely with damper manufacturers Belimo has recently developed a special design of smoke extraction system which employs the new BE smoke-extraction actuator and the SBSE-Control monitoring system.



Legend:

Smoke damper with BE actuator and BKNE230-24 power and communications

Article on Safety (PPR3/00L)

The new design solution for smoke extraction has been tailored specifically to the demands of as many different makes of damper as possible. Thanks to their high torque output the BE actuators are also able to move even large smoke-extraction dampers to the required safe position within 60 seconds while the system is actually working. A high holding torque produces permanent pressure on the damper so that it is held securely in the required safe position.

Like Belimo fire-protection actuators the BE smoke-extraction versions also have a very compact housing and all gearing components with a function relevant to safety are made of special heat-resistant steel. Two floating changeover contacts are provided for the precise feedback of damper position.

Central control and monitoring

For the central control and monitoring of up to six smoke extraction dampers Belimo offers its own design of system called SBSE-Control. It links the actuator mounted on the damper to a matching control and communications unit in the equipment cubicle so that fault alarms can be passed on directly to higher-level control and fire alarm systems. Also available, by the way, is an analogue system for fire and smoke dampers known as Belimo SBS-Control.

Working together with damper manufacturers

In order to ensure absolute maximum safety Belimo only supplies its fire-protection and smoke-extraction actuators to the manufacturers of dampers. This is so that the manufacturers can then assemble the dampers and actuators into self-contained functional units which are able to conform to the relevant safety specifications laid down by various official bodies. Fire-safety and smoke-extraction dampers equipped with Belimo motorised actuators can be purchased directly from damper manufacturers.

More information can be obtained from:

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