



Actionair Trans/Shield ACS

Fully Automated Intumescent
Fire and Sliding Plate Smoke Damper

Application

The Trans/Shield ACS fully automated intumescent fire and sliding plate smoke dampers are designed for air transfer applications through fire rated doors.

Features and Design Guide

Slimline non-vision intumescent fire damper with unique sliding plate smoke control.

Fully automatic open/close operation with Talkback 2-way communication smoke control system.

Continuous status monitoring and display.

Fail-safe closure for smoke control operation.

Self testing on a 24 hour programme.

Automatic reset to open position when alarmed cancelled or power restored.

Low voltage DC supply.

Up to 16 damper controlled from one Talkback panel with simple loop wiring.

Complies to electro magnetic compatibility and low voltage directives.

Designed and Built in Britain

Patent Nos. Pending

Introduction

Air transfer products have many applications in new building and refurbishment projects. Ventilation through doors and walls is often a very cost effective means of improving air quality by better air distribution. However, the use of straight forward air transfer grilles often conflicts with the needs of fire safety, particularly where ventilation is required between fire compartments or into corridors and other "means of escape" routes.

The Trans/Shield ACS door mounted damper/air transfer products have been tested in door assemblies under the conditions of BS476 Part 22 to determine fire performance, and BS476 Part 31.1 to established smoke leakage criteria.

It is worth noting that a fire door illegally jammed open to allow air movement, or a fire door which cannot be opened or closed properly due to differential air pressure, is potentially a major hazard in the real world.

Ventilation engineers have found the flexibility of the design that the automatic fire and smoke dampers provide, contribute to versatile installations which meet the demands of good air quality and fire safety requirements.

Computer rooms and communications centres are often protected from the spread of fire by the use of halon substitute gases.

The nature of these environments demand good air movement but, in the event of a fire, the containment of the fire suppressant gases is imperative. Once the fire is out, it is also important to be able to automatically ventilate the enclosure to allow the earliest human occupancy. The Trans/Shield ACS fire and smoke damper/air transfer grilles will satisfy these needs entirely.

Specification

The Trans/Shield ACS shall comprise of an assembly with three slotted plates, two fixed and one sliding plate allowing air transfer when in the open position. This is fail-safe operated closed by motorised actuator to prevent the passage of cold smoke in the event of an alarm or power failure.

The non-vision grilles each side of the sliding plate assembly are manufactured from P.V.C. slats with an intumescent core. A increase in temperature resulting from either flames or hot gases causes the grille to intumesce fusing together to provide an effective barrier to the passage of fire and hot smoke. This complies to BS476 Part 20: 1987 for a period of 1 hour and the leakage requirements of BS476 Part 31: Section 31.1.

Trans/Shield ACS are available in 3 sizes – 200mm x 200mm, 300mm x 300mm and 450mm x 450mm having respective effective free area of 0.012m², 0.027m² and 0.061m².

Smoke Control Systems

Fire resistant air transfer grilles for a range of applications and fire performance levels are available in the form of intumescent damper/air transfer grilles. These products react to temperatures in excess of 140 °C, whereupon the swelling of the intumescent material seals the entire aperture area. This system, whilst very effectively preventing the spread of fire through air transfer apertures in fire doors, walls or ducts, does not control the movement of cold smoke or fire extinguishing gases.

To satisfy this requirement the Trans/Shield ACS will, when combined with intumescent damper/air transfer grilles, provide complete fire and smoke protection.

The smoke control systems are intended to be interfaced with a fire alarm panel via a Damper Control Unit (DCU).

It is possible to connect the DCU direct to "stand alone" smoke sensors without an interface with the building alarm panel. This should only be undertaken after consultation with the Fire Authorities and the Actionair Customer Service Office.

The Trans/Shield ACS smoke control systems satisfies the need offering up to sixteen dampers per control panel with full status monitoring and automatic cycling facilities.

Special control systems can be supplied to suit specific customer installation needs.

All relevant components in the smoke control systems have been tested to the appropriate standards in conformance with Electro Magnetic Compatibility and Low Voltage Directives.

Talkback Control System

Most large public buildings, high rise offices, hospitals and hotels require a significant number of FD30S and

FD60S fire doors (30 minute or 60 minute fire doors with smoke leakage constraints), within any one fire zone. These doors may spread over a considerable distance and may even be at different floor levels, and may have to provide air transfer. Additional air transfer may be required through wall apertures or duct openings.

The Talkback system has been designed to provide up to 16 damper/air grille locations with one centralised status monitoring location. The unique 2 way communication system between the Damper Control & Monitor Unit (DCM) and the damper actuators facilitates rapid assessment of serviceability of installation and immediately identifies the location of a defective damper.

The Talkback system comprises a DCM and up to 16 uniquely addressed damper assemblies. The interconnecting 3 core cable can be installed as a loop for greater reliability and maximum range, or it may be spurred if necessary.

An audio warning device can also be connected to the DCM as an optional extra. This device would be incorporated to draw attention to the DCM status display in the event of a fault occurring.

The DCM incorporates connection for battery back-up but there is insufficient space to accommodate a rechargeable battery within the enclosure. An appropriate battery and enclosure is available from Actionair if required.

Features

Fail-Safe

Designed to close automatically in the event of a fire alarm being activated, a power failure or wiring damage.

Auto Reset

Will reset automatically to the open position when the fire alarm is cancelled or power restored.

For information regarding cutting hole sizes/installation/wiring etc. please refer to Customer Service Office.

Autocycling

Once in every twenty-four hours each damper is closed and re-opened to prevent a build up of dust or debris between moving parts.

Loop Wiring

Up to 16 dampers can be connected via a 3 core cable which can be arranged in a ring. The wires from the Damper Control & Monitor Unit to the dampers carry only safe low DC voltages.

Continuous Monitoring

Talkback dampers/air transfer grilles are monitored continuously by the DCM which identifies the status of each individual damper through its uniquely – addressed chip.

Positive Closing

Energy stored within a capacitor on each damper actuator is used to power the electric motor to the closed position in the event of a fire alarm being activated.

Solid State

Solid state microchip technology is employed to provide versatility and reliability.

Assembled Tested

Each damper is assembled and fully tested, therefore requiring no adjustment on site, facilitating simple installation.

Compatibility

The Talkback system is designed to interface with any fire alarm panel and subsequent to initial installation, additional damper/shutters can be incorporated where there are free channels in the system.

C E Marking

Successfully tested in accordance with the requirements of Electro Magnetic Compatibility and Low Voltage Directive, and therefore bears the CE mark.

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For further information, please refer to the Actionair Trans/Shield product catalogue or contact our Customer Service Office.

The information contained herein is subject to change without notice due to continuing research and development