

TransShield ACS

Fully Automated Intumescent Fire and Sliding Plate Air Transfer Grille



KEY FEATURES

- Loop Wiring up to 16 dampers can be connected via a 3-core cable which can be arranged in a ring.
- Compatibility with the Talkpac system is designed to interface with any fire alarm panel.
- 1 hour fire rating Door or Wall mounted
- Autocycling, once every twenty four hours to prevent dust build up

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Introduction

The TransShield ACS fully automated intumescent fire and sliding plate air transfer grille are designed for air transfer applications through fire rated doors and walls. (Internal doors only).

The range of combined intumescent air transfer grille can be used in all applications where cold smoke containment is required. These dampers are connected, via a control panel, to a standard fire alarm system. In event of an alarm condition, or power failure, the dampers shut, preventing the passage of cold smoke. These products have been designed to allow the smoke damper element to be used without the intumescent, in applications where only smoke and/or gas containment is required.

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 TransShield ACS-D door mounted damper/air transfer products have been tested in door assemblies under the conditions of BS 476 Pt 22 to determine fire performance, and BS 476 Pt 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.

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 TransShield ACS fire and smoke damper/air transfer grilles will satisfy these needs entirely.

The Range

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 100 °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 TransShield 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 the Talkpac panel. It is possible to connect the Talkpac panel 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 Sales Office.

The TransShield ACS air transfer grille system 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.

Talkpac 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 Talkpac 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 Talkpac panel and the damper actuators facilitates rapid assessment of the installation and immediately identifies the location of a defective damper.

TransShield ACS-D

Door Mounted

Non-Vision Fire and Smoke Air Transfer Grille.

TransShield ACS-D is a non-vision style fire and smoke air transfer grille designed to fit into a door (minimum 44mm thickness for 30 minutes & 54mm for 60 minutes). They come complete as a factory tested product with decorative flanges to suit. These products require no cover grilles as the slat components are angled to ensure visual privacy and are finished in white. Operation of the smoke damper would be through the Talkpac control panel. Up to 60 minutes fire resistance can be achieved with this product.

Orientation

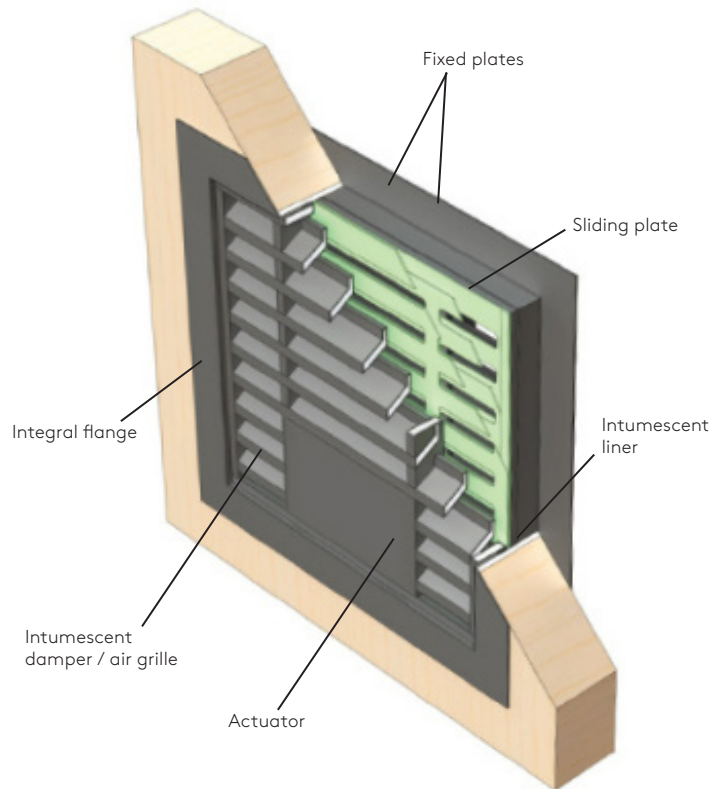
These products are designed to be installed in a vertical orientation as shown.

Standard Sizes Available (mm)

200mm wide x 200mm high

300mm wide x 300mm high

400mm wide x 400mm high



TransShield ACS-W

Wall Mounted

Non-Vision Fire and Smoke Air Transfer Grille.

Wall mounted fire and smoke air transfer grille are supplied as factory tested units complete with steel cover grilles. The non combustable housing containing the shutter plate system and intumescent damper is manufactured to the depth of the wall (minimum 90mm) allowing simple and quick installations on site. Up to 60 minutes fire resistance can be achieved with this product. Operation is through a Talkpac control panel.

Key Features

- 60 minutes fire resistance
- Containment of cold smoke
- Supplied as a tested assembly
- Simple installation
- Auto reset and failsafe
- Safe low DC voltage
- Status reporting and autocyc
- Optional audible warning fac
- No current used when open c closed
- Bi-directional airflow.

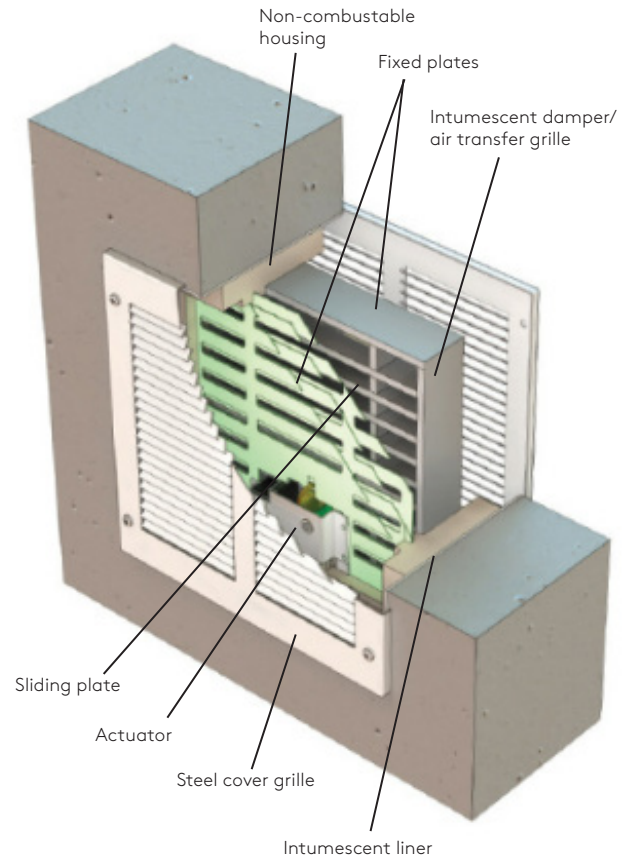
Standard sizes available (mm)

200mm wide x 200mm high

300mm wide x 300mm high

400mm wide x 400mm high.

Depths available 100,150,200,225,250 and 300mm.



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.

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 Talkpac panel to the dampers carry only safe low DC voltages.

Continuous Monitoring

TransShield ACS dampers/air transfer grilles are monitored continuously by the Talkpac panel 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.

Standard sizes available (mm)

200mm wide x 200mm square unit

300mm wide x 300mm square unit

400mm wide x 400mm square unit.

Effective Free Area

0.012 m² 200mm x 200mm

0.027 m² 300mm x 300mm

0.061 m² 400mm x 400mm.

Compatibility

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

TransShield ACS-D

Door Mounted



TransShield ACS-W

Wall Mounted



Features

Application

The Talkpac system provides monitoring and control for up to 16 uniquely addressed TransShield ACS Units form a centralised status monitoring location.

The unique 2 way communication system ensures rapid installation, assessment and immediate identification of the location of a defective damper.

The interconnecting 3-core cabling, installed as a loop, provides for greater reliability and maximum range. It may be spurred if necessary.

An audible warning device drawing attention to the panel's status display, should a fault occur, can be connected to the panel as an optional extra.

Within the panel is a connection for battery back up. An appropriate battery and enclosure is available at extra cost.

Talkpac panel

This unit provides DC power, and monitors the status of dampers whilst interfacing with the fire alarm.

The display panel contains three rows of LEDs.

- The top row of green LED's indicates the dampers are open as per command.
- The bottom row of greens LED's indicates during a test cycle that the dampers are closed as commanded.
- The middle row of red LED's indicates a fault or an unconnected channel.

Therefore, each vertical group of three LED's (i.e. Green, red and green) gives the status of the corresponding damper, i.e. open, fault, closed.

There are two methods of interfacing the panel with a fire alarm panel:-

A. A signal generated by the Talkpac panel from the terminals marked can be passed through a normally closed volt free contact on the alarm panel.

Or

B. If the alarm panel has a spare 24 volt DC signal output, which is normally live but ceases in the event of an alarm, this output can be wired to the FA (Aux) terminals in the panel.

Sequence of operation during initial powering up.

1. The panel converts 230V AC to 12.8V DC at this stage, an alarm condition is indicated until the system is stabilised.
2. Each ACS damper is then instructed over the next few seconds, according to its particular address. Once opened, each damper confirms back to the panel within 20 seconds of receiving instructions. All top row green LED's should then remain lit.
3. Every 10 seconds, the panel then sends a signal to each damper actuator which in turn signals back to the panel that it is conforming with instructions; or a fault is assumed.
4. If a damper fails to open fully, no confirmation signal is received by the panel for that particular damper and the red LED will illuminate.
5. Subsequently, the panel provides a continuous status update.
6. In a test or real alarm situation, each damper will be instructed to close and all bottom row green LED's should then be lit.
7. If a damper fails to receive the panel signal within 10 seconds, a fault or alarm is assumed, the damper will fail safe closed.
8. For test purposes a rotary switch is incorporated in the panel, which should be operated by a non metallic screwdriver.
9. Simulated alarm conditions are automatically conducted every 24 hours during the auto-cycle.

Wiring Information

As each damper within a system has an individual code, a 3-core cable is needed to provide a means of supply and signalling to each unique address.

Maximum cable lengths

1. With 1mm² wire provides a ring system of a maximum circumference of 100 metres. If installed radially or spurred the maximum length is 50 metres.
2. With 2mm² wire provides a ring system of a maximum circumference of 200 metres. If installed radially or spurred the maximum length is 100 metres.
3. With 2.5mm² wire provides a ring system of a maximum circumference of 250 metres. If installed radially or spurred the maximum length is 125 metres.

These cable runs can be extended by increasing the wire cross sectional area.

Conductor hinge

Where door mounted dampers are required, power and signal from the panel can be introduced to the door leaf by means of a specifically designed multiwired conductor hinge. Therefore, the wiring can be completely concealed and is less vulnerable to tampering.

The enclosure measures 175mm (w) x 160mm (h) x 130mm (d) overall.

Access for wiring connections is through a screw fixed panel in the lower section of the enclosure.

Optional Audible Alarm BMS Interface

The optional Audible Alarm BMS Interface monitors the number of dampers connected to the system. Should one of the dampers fail, the unit will give an audible alarm as well as changing the BMS contacts from closed to open.

Ordering Key

TransShield

	a	b	c
Installation:			
ACS-D - Door Mounted			
ACS-W - Wall Mounted			
Size:			
Size 1 - 200x200			
Size 2 - 300x300			
Size 3 - 400x400			
Depth (ACS-W only):			
100,150,200,225,250,300mm			

Accessories

Talkpac Controller for up to 16 devices.

Battery Backup

Audible Alarm (BMS Interface)

Conductor Hinge Set (Set of 3 hinges including 1 x conductor hinge).

Intumescent Sealant (310ml cartridge)

Example:

TransShield ACS-W-Size 2-300

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