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# TransShield ACS

Air Transfer Grille - Fire & Smoke

## Health and safety

- This process must be undertaken by a competent person. More than one person may be required to ensure the safe handling of large dampers and other materials. Use must be made of access equipment to ensure unsafe practices are not used to approach walls or difficult access areas.
- Standard site PPE should be used (minimum steel toe cap boots, hard hat) together with any protective eye wear, gloves and masks, when drilling or cutting is being undertaken. The latter should also be used when handling the wall construction materials, as defined by the material suppliers. If loud equipment is being used, hearing protection should be used.
- All waste materials should be collected and disposed of as defined by the relevant supplier.
- Care must be taken when installing and inspecting dampers.
- Do not introduce any items, fingers or limbs inside the damper casing.
- Larger dampers are heavy and must be handled in accordance with current local regulations and good practice.
- All wiring should be carried out in accordance with the wiring details provided, to the IEC regulations.
- Dampers are life safety products and must be treated with care during handling, storage and installation.
- Actionair TransShield ACS Dampers are designed for applications in normal dry filtered air systems and should be subjected to a planned inspection programme.

## Door Mounted Systems

### Fire Door (30 minute)

TransShield ACS-D Non-Vision Fire + Smoke Air Transfer Grille Into Timber Fire Door

Description
1. 44mm thick timber fire door
2. Mounting flange
3. Horizontal intumescent louvred slats
4. Air transfer grille to door fasteners - 25 mm wood screws
5. Hit +miss smoke control plates. Central plate moves, outer plates fixed
6. Servo driven actuator
7. Intumescent inserts between the air transfer grille and the door
8. Drop seal

In order to comply with CF564, the upper edge of the grille shall be no higher than 800mm from floor level. Consult door manufacturer before cutting out in relation to permissible aperture sizes and locations

If the door leaf core does not comprise a solid timber lamel core (i.e. a core of chipboard, flaxboard etc.), the aperture provided in the leaf should be lined to full width using hardwood, with a minimum density of 650kg/m<sup>3</sup> and a thickness of at least 6mm. This hardwood liner may be omitted should the leaf have been tested.

#### TransShield ACS-D into a timber fire door FD30S

Fire Resistance in  
accordance with  
BS 476-22:1987

Approval Ref  
CF564

Max single cell size  
400x400mm / 0.16m<sup>2</sup> at  
up to 800mm above  
FFL\*\*

Requires an aperture 5mm over  
size. e.g. a 300mm x 300mm needs  
an aperture 305mm x 305mm to  
accommodate the flange.

#### INSTALLATION INSTRUCTIONS

Ensure that cutting an aperture in the door will not detract from the fire integrity of the door. Contact the manufacturer to establish the maximum size and optimum position.

The initial installation of this type of air transfer grille is best carried out with the door dismantled. If rebated threshold seal is to be fitted this should be done temporarily before fitting the TransShield ACS-D assembly and then removed.

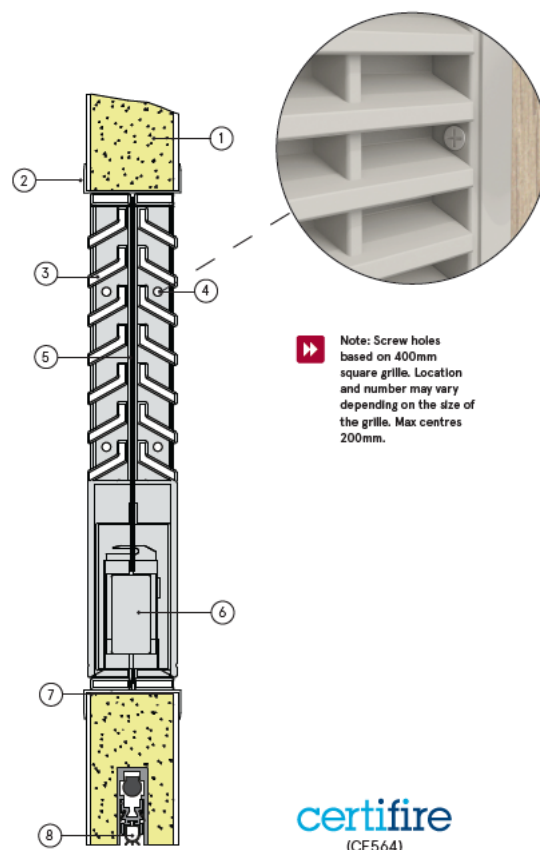
Cut the aperture to the required size with a maximum gap all around the outside of the flange of 3mm.

Check that the two halves of the air transfer grille fit into the aperture without twisting jamming or in any way distorting. Remove TransShield ACS-D sub assemblies from aperture.

Drill vertical outer frames of each air transfer grille and flange sub assembly to accept fixing screws if not pre-drilled when supplied.

Drill and rebate door to provide wiring route to conductor hinges or loop connection (refer to conductor hinge datasheet).

Fit intumescent inserts to the inside faces of the



#### Contents

- TransShield ACS-D fire + smoke resistant air transfer grille
- Wiring instructions
- 44mm Intumescent Liner (included)

#### Tools Required

- 25mm wood screws
- Power Drill
- Screw Driver

aperture.

Fit the TransShield ACS-D sub assembly that incorporates the actuator into the aperture, ensuring that the actuator is at the bottom of the aperture. Route the wiring in to the required connection (hinge or loop) ensuring that it lies tidily and does not cause any distortion of the damper or is likely to become trapped.

Fit retaining wood screws through pre-drilled holes in TransShield ACS-D vertical outer uprights into door.

#### Refer to wiring instructions.

Carry out a function check of the air transfer grille by activation from the control unit whilst actuator is visible and wiring accessible, before fitting the remaining half of the TransShield ACS-D.

After satisfactorily completing function check, fit the remaining half TransShield ACS-D assembly ensuring that the smoke control sliding plates do not become squeezed between the two air transfer grille halves or wiring becomes trapped.

Repeat the function check on complete installation.

## Door Mounted Systems

# Fire Door (60 minute)

TransShield ACS-D Non-Vision Fire + Smoke  
Air Transfer Grille Into Timber Fire Door

## Description

1. 54mm thick timber fire door
2. Mounting flange
3. Horizontal intumescent louvred slats
4. Air transfer grille to door fasteners - 25 mm wood screws
5. Hit +miss smoke control plates. Central plate moves, outer plates fixed
6. Servo driven actuator
7. Intumescent inserts between the air transfer grille and the door
8. Drop seal

In order to comply with CF564, the upper edge of the grille shall be no higher than 800mm from floor level. Consult door manufacturer before cutting out in relation to permissible aperture sizes and locations

If the door leaf core does not comprise a solid timber lamel core (i.e. a core of chipboard, flaxboard etc.), the aperture provided in the leaf should be lined to full width using hardwood, with a minimum density of 650kg/m<sup>3</sup> and a thickness of at least 6mm. This hardwood liner may be omitted should the leaf have been tested.

## TransShield ACS-D into a timber fire door FD60S

Fire Resistance in  
accordance with  
BS 476-22:1987

Approval Ref  
Applus-19-19940-1428\*  
CF564\*\*

Max single cell size  
350x350mm at up to  
1350mm above FFL\*  
400x400mm / 0.16m<sup>2</sup>  
at up to 800mm above  
FFL\*\*

Requires an aperture 5mm over  
size. e.g. a 300mm x 300mm needs  
an aperture 305mm x 305mm to  
accommodate the flange.

## INSTALLATION INSTRUCTIONS

Ensure that cutting an aperture in the door will not detract from the fire integrity of the door. Contact the manufacturer to establish the maximum size and optimum position.

The initial installation of this type of air transfer grille is best carried out with the door dismantled. If rebated threshold seal is to be fitted this should be done temporarily before fitting the TransShield ACS-D assembly and then removed.

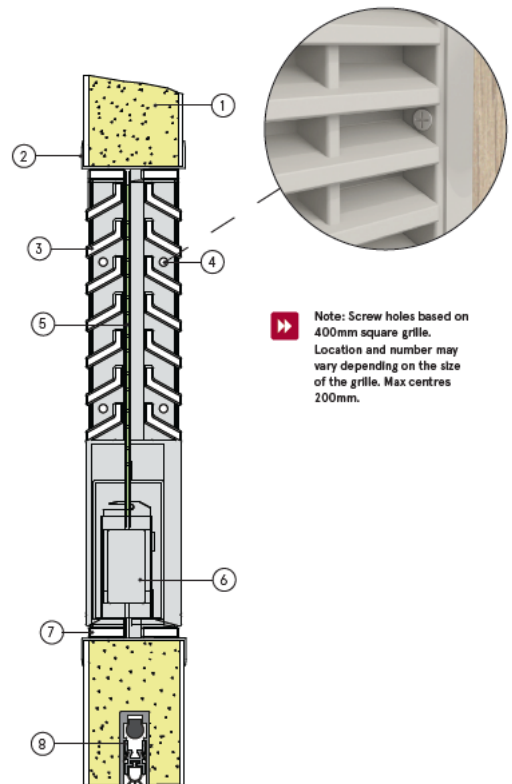
Cut the aperture to the required size with a maximum gap all around the outside of the flange of 3mm.

Check that the two halves of the air transfer grille fit into the aperture without twisting jamming or in any way distorting. Remove TransShield ACS-D sub assemblies from aperture.

Drill vertical outer frames of each air transfer grille and flange sub assembly to accept fixing screws if not pre-drilled when supplied.

Drill and rebate door to provide wiring route to conductor hinges or loop connection (refer to conductor hinge datasheet).

Fit intumescent inserts to the inside faces of



**certifire**  
(CF564)

## Contents

- TransShield ACS-D fire + smoke resistant air transfer grille
- Wiring instructions
- 54mm Intumescent Liner (included)

## Tools Required

- 25mm wood screws
- Power Drill
- Screw Driver

the aperture.

Fit the TransShield ACS-D sub assembly that incorporates the actuator into the aperture, ensuring that the actuator is at the bottom of the aperture. Route the wiring in to the required connection (hinge or loop) ensuring that it lies tidily and does not cause any distortion of the damper or is likely to become trapped.

Fit retaining wood screws through pre-drilled holes in TransShield ACS-D vertical outer uprights into door.

## Refer to wiring instructions.

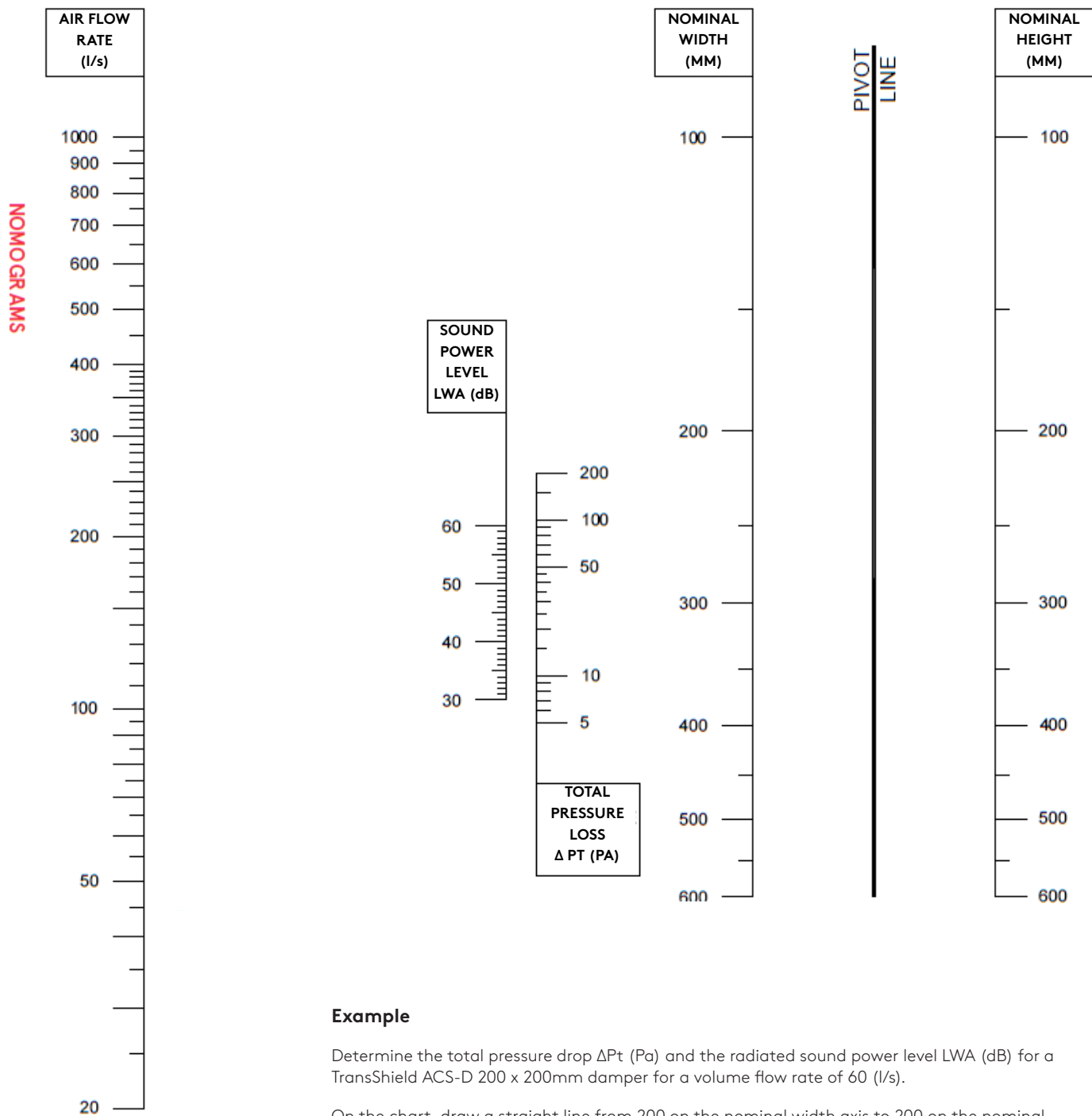
Carry out a function check of the air transfer grille by activation from the control unit whilst actuator is visible and wiring accessible, before fitting the remaining half of the TransShield ACS-D.

After satisfactorily completing function check, fit the remaining half TransShield ACS-D assembly ensuring that the smoke control sliding plates do not become squeezed between the two air transfer grille halves or wiring becomes trapped.

Repeat the function check on complete installation.

Performance Criteria

The acoustic and aerodynamic performance is based on a **door mounted** application with a TransShield ACS-D fire and smoke rated intumescent damper.



Example

Determine the total pressure drop  $\Delta Pt$  (Pa) and the radiated sound power level LWA (dB) for a TransShield ACS-D 200 x 200mm damper for a volume flow rate of 60 (l/s).

On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 60 (l/s) on the flow rate axis. The radiated sound power LWA (dB) and total pressure drop  $\Delta Pt$  (Pa) may now be read directly.

- Type: TransShield ACS-D 200 x 200mm
- Flow rate(l/s): 60
- Total pressure drop (Pa): 42
- Radiated sound power LWA (dB): 45

# Rigid Wall

## TransShield ACS-W Fire + Smoke Air Transfer Grille Fitted Into Rigid Walls

### Description

1. Rigid wall construction
2. Air transfer grille casing fixing screw
3. Mortar facing over irregular surface
4. Mineral board casing
5. Pressed steel cover grille
6. TransShield ACS-W fire + smoke air transfer grille
7. Actuator cable
8. Servo driven actuator
9. Intumescent sealant to bed casing into wall
10. Cover grille fixing screws into wall plugs.

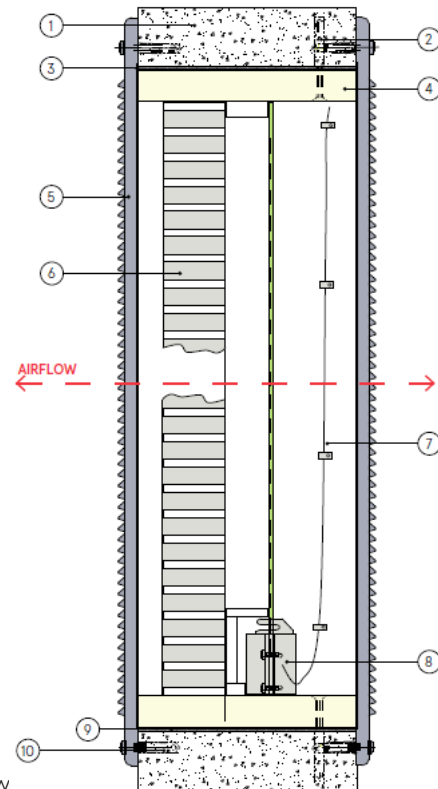
### Contents

- TransShield ACS-W fire + smoke resistant air transfer grille
- Cover grille (optional)
- Wiring instructions
- Intumescent sealant (310ml included).

### Tools Required

- 50mm screws
- Wall plugs for 50mm screw
- Cable clips

Note: To achieve insulating rating, a cover grille must be fitted



Note: In order to comply with CF564, the upper edge of the grille shall be no higher than 3000mm from floor level. The lower edge of the grille shall be no closer than 400mm to floor level.

### TransShield ACS-W fitted into rigid walls

### EI60S/FR90S\*

Fire Resistance in accordance with  
BS 476-22:1987  
BS EN 1364-5:2017

Approval Ref  
\*Certifire CF564  
18/17274-1071

Max single cell size  
400mm (w) x 400mm (h)  
(440mm x 440mm overall)  
or 0.2025m<sup>2</sup> - Certifire

TransShield ACS-W comes in a non-combustible housing which means the actual size of the product is approx. 40mm larger. E.g. a 300mm x 300mm damper is actually 340mm x 340mm due to the housing.

### INSTALLATION INSTRUCTIONS

TransShield ACS-W air transfer grilles are supplied ready assembled in a mineral board casing. Care must be taken not to damage the casing during installation.

Cut the aperture to the required size with a maximum gap all around of 5mm. If the resulting aperture is out of square, regular or oversized, make good with mortar.

If the TransShield ACS-W is already fitted with cover grilles these must be removed.

Drill the casing for fixing screws to the wall, minimum of 4 number will be needed.

Trial fit the TransShield ACS-W assembly into the aperture and ensure that it can be positioned within the section of the wall, without jamming or twisting.

Position the TransShield ACS-W assembly so that one face is flush with one face of the wall. Mark around the air transfer grille (ATG) casing at the opposite face to determine the amount needed to be removed to give a flush fit on both faces. Also mark the positions of the wall fixing screws through the holes drilled.

Establish the actuator cable run and make the necessary cut outs to suit.

Remove the ATG assembly from the wall aperture. Trim the ATG casing to the marked length.

Drill the wall for screw plugs and fit plugs.

Apply intumescent sealant to aperture faces. Position ATG assembly square and flush to both faces of the wall while feeding the actuator cable into the selected position.

Bed in sealant around TransShield ACS-W casing. Clean off surplus sealant and ensure outer edge of TransShield ACS-W casing is fully sealed.

Fix actuator cable to casing with small cable clips to prevent it fouling the shutter plates.

See wiring instructions.

Carry out function check of the ATG by activation from the control unit.

After satisfactorily completing the function test, position a pressed steel cover grille concentrically over one face of the

TransShield ACS-W and fix using screws into wall plugs.

Repeat to other face if two cover grilles are to be fitted.

# Flexible Wall

TransShield ACS-W Fire + Smoke Air Transfer  
Grille Fitted Into Fire Rated Flexible Walls

Description
1. FR Flexible wall
2. Air transfer grille casing fixing screw
3. Mineral board facing
4. Pressed steel cover grille
5. TransShield ACS-W fire + smoke air transfer grille
6. Actuator cable
7. Servo driven actuator
8. Intumescent sealant to bed casing into wall
9. Cover grille fixing screws into wall plugs.

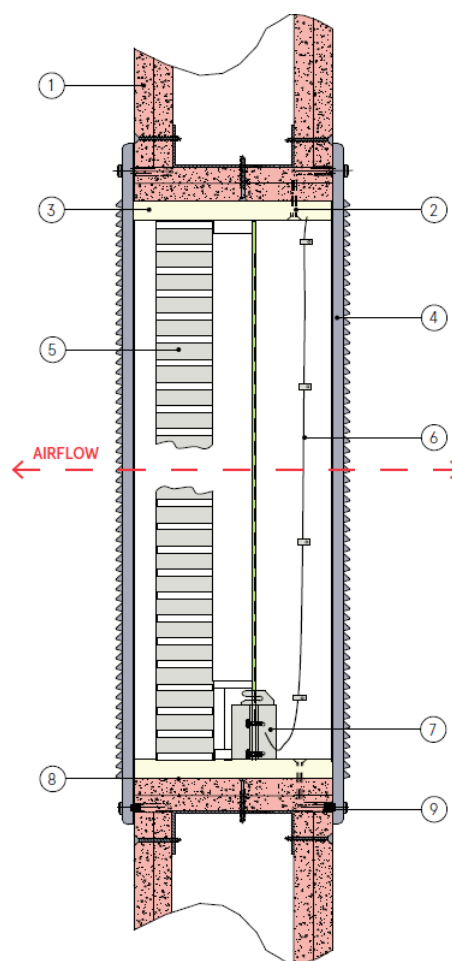
## Contents

- TransShield ACS-W fire + smoke resistant air transfer grille
- Cover grille (optional)
- Wiring instructions
- Intumescent sealant (310ml included).

## Tools Required

- Cable clips
- Screws (3.5 x 42mm)

Note: To achieve insulating rating, a cover grille must be fitted.



## TransShield ACS-W fitted into fire rated flexible wall

### EI60S

Fire Resistance in accordance with  
BS EN 1364-5:2017

Approval Ref  
LBO-1333/19E

Max single cell size  
400mm (w) x 400mm (h)  
(440mm x 440mm overall)

TransShield ACS-W comes in a non-combustible housing which means the actual size of the product is approx. 40mm larger. E.g. a 300mm x 300mm damper is actually 340mm x 340mm due to the housing.

## INSTALLATION INSTRUCTIONS

TransShield ACS-W dampers are supplied ready assembled in a mineral board casing.

Care must be taken not to damage the casing during installation.

Cut the aperture to the required size with a maximum gap all around of 5mm. Ensure final aperture is square and correct to size.

If the TransShield ACS-S is already fitted with cover grilles these must be removed.

Drill the casing for fixing screws to the wall, minimum of 4 number will be needed.

Trial fit the air transfer grille (ATG) assembly into the aperture and ensure that it can be positioned within the section of the wall, without jamming or twisting.

Position the TransShield ACS-W assembly so that one face is flush with one face of the wall. Mark around the ATG casing at the opposite face to determine the amount needed to be removed to give a flush fit on both faces. Also mark the positions of the wall fixing screws through the holes drilled.

Establish the actuator cable run and make the necessary cut outs to suit.

Remove the TransShield ACS-W assembly from the wall aperture. Trim the ATG casing to the marked length.

Apply intumescent sealant to aperture faces. Position TransShield ACS-W assembly square and flush to both faces of the wall while feeding the actuator cable into the selected position.

Fit casing fixing screws to wall.

Bed in sealant around ATG casing. Clean off surplus sealant and ensure outer edge of TransShield ACS-W casing is fully sealed.

Fix actuator cable to casing with small cable clips to prevent it fouling the shutter plates.

See wiring instructions.

Carry out function check of the damper by activation from the control unit.

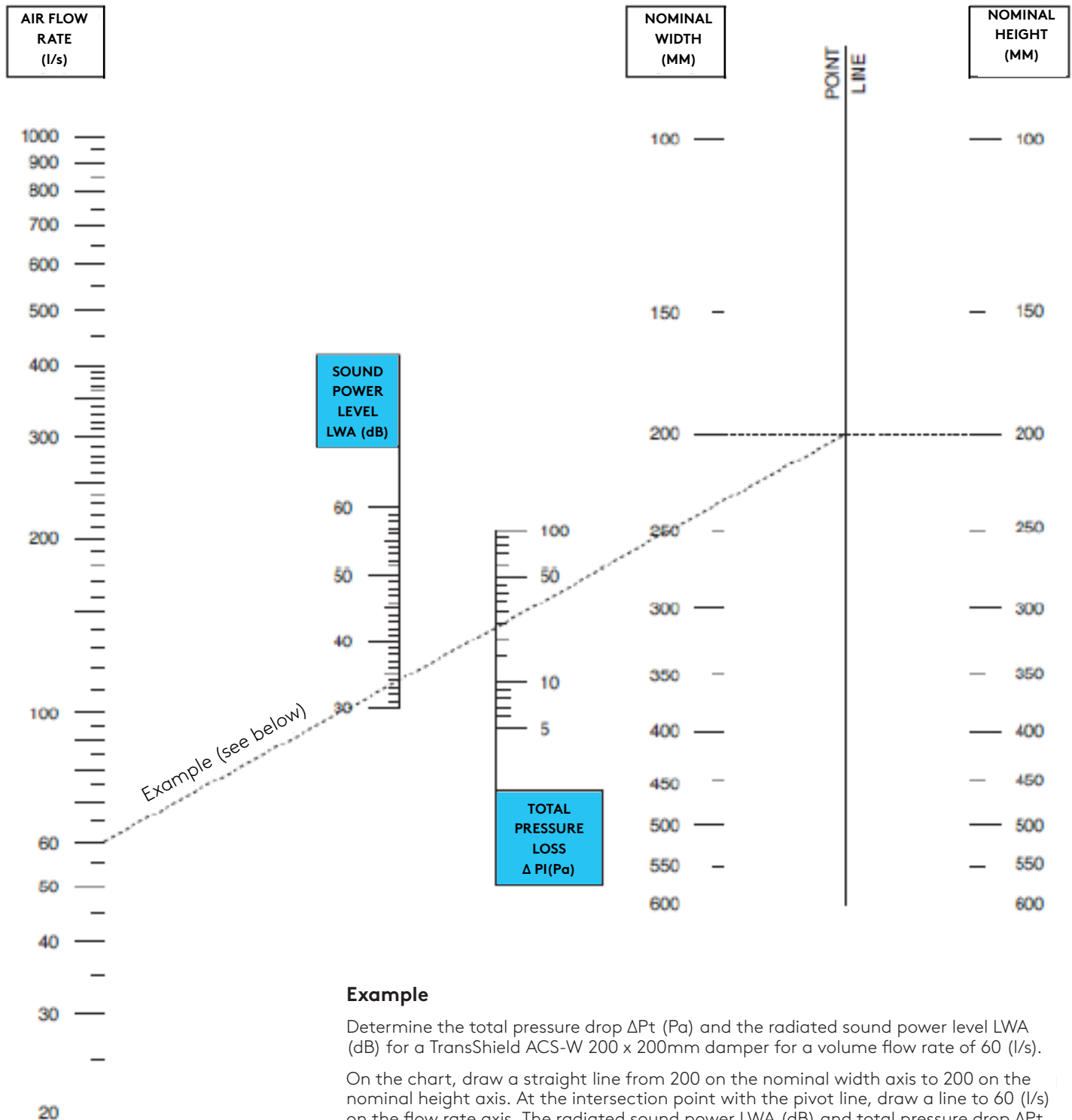
After satisfactorily completing the function test, position a pressed steel cover grille concentrically over one face of the

TransShield ACS-W and fix using screws.

Repeat to other face if two cover grilles are to be fitted.

## Performance Criteria

The acoustic and aerodynamic performance is based on a **wall mounted** application with a TransShield ACS-W fire and smoke rated intumescent damper fitted with cover grilles.



### Example

Determine the total pressure drop  $\Delta P_t$  (Pa) and the radiated sound power level LWA (dB) for a TransShield ACS-W 200 x 200mm damper for a volume flow rate of 60 (l/s).

On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 60 (l/s) on the flow rate axis. The radiated sound power LWA (dB) and total pressure drop  $\Delta P_t$  (Pa) may now be read directly.

**Type:** TransShield ACS-W 200 x 200mm

**Flow rate(l/s):** 60

**Total pressure drop (Pa):** 23

**Radiated sound power LWA (dB):** 34



# Wiring & Electrical Connections

Up to 16 dampers/shutters can be connected using a 3-core cable arranged in a ring (diagram A). Using 1mm<sup>2</sup> wire will allow a ring system with a maximum circumference of 100 metres. If a radial or spurred system is to be installed, the maximum length of each leg will be 50 metres.

These lengths can be increased proportionally to increments of wire cross sectional area. Using a spurred system may limit the number of dampers that can be connected to a DCM (diagram B).

Damper Control Monitors should always be located where they can be routinely viewed or a audio warning options should be incorporated and positioned where they can be heard by a responsible member of staff.

Wiring installations and commissioning should only be undertaken by qualified personnel working with Actionair wiring, fitting and commissioning instructions.

A completed wiring diagram for each installed system should be passed to the building operator after commissioning. The diagram should indicate the location of each damper and its DCM address.

A three wire cable is required to connect the Damper Control Monitor (DCM) to the dampers.

Using 1mm<sup>2</sup> wire provides a ring system of a maximum circumference of 100 metres. If installed radially or spurred, the maximum length is 50 metres.

These lengths can obviously be increased with increments of wire cross sectional area.

Since Talkpac is a multiplex system and therefore only one damper is being activated at any one time, only the length of the longest spur need be taken into account on an installation where a ring serves several spurs.

Generally 1mm<sup>2</sup> flat twin and earth cable is acceptable for the Talkpac system, since in the event of cable failure due to a fire, the system will automatically fail safe to the closed position. However, it is advisable to check with the local fire officer that such cable does not conflict with local policy.

In which event, fire resistant cable may be used so long as it provides at least the same capacity as 1mm<sup>2</sup> copper wire.

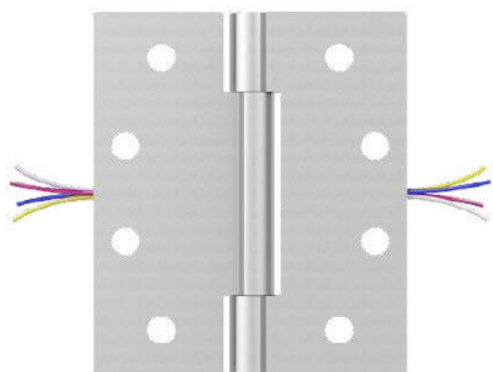
Each damper/air transfer grille within a system has an individual code; therefore a 3-core cable is employed in order to provide a means of supply and signaling to each unique address.

Please refer to Actionair wiring diagrams and the comprehensive fitting instructions before attempting installation.

## Conductor Hinge

Our electrical conductor hinges designed for concealed transfer of power from fire + smoke air transfer grilles into the door leaf. The hinge utilises advanced polymer bushes to provide a totally maintenance free, low friction hinge.

Tested to BS EN 1935:2002 and Certifire Approved. Capable of carrying 24v at 2 amps.



**Certification**  
(CF209)

### Test evidence

Building hardware: BS EN 1935:2002.  
CE Certificate no.: 1121-CPR-AC0063.  
Durability: Tested to 200,000 cycles.

### Size

Height: 100mm  
Width: 88mm.  
Thickness: 3mm.

### Cable detail

Standard length: 1m frame side and leaf side.  
4-core cable supplied as standard (3-core + spare). other options available for special order.

### Material

Mild steel as standard. 304/316 stainless steel available to special order.

### Application

Suitable for timber fire doors.  
minimum door thickness 44mm.  
30 and 60 minute timber and mineral-based assemblies.  
Maximum leaf weight: 120kg.

### Use with

Talkback damper control system.

### Fixing

To be fitted with MAP intumescent hinge pads (included).  
Supplied with manufacturer's wood screws (M5 x 32mm).

### Classification





# CE Intumescent Acoustic Acrylic Sealant

CE Marked Intumescent Acoustic Acrylic Sealant designed to cover the Construction Products Regulation 2011 (CPR) requirements for linear gap seals and penetration seals.

When exposed to fire, it expands in volume to fill all cavities; providing a necessary hot smoke seal. It's suitable for sealing gaps between fire resistant walls and floors, between conduits and walls/floors and between fire resistant walls and structural supports.

Actionair intumescent sealant is also recommended for sealing the perimeter of fire and smoke resistant air transfer grilles.

## System Specifications

### Test evidence

CE marked.  
 Fire: BS EN 1366-3:2004  
 Fire: BS EN 1366-4:2006  
 Fire: BS EN 13501-2:2016  
 Acoustic: BS EN ISO 10140-2:2010  
 Building Construction: BS EN ISO 8339:2005  
 Building Construction: BS EN ISO 9046:2004 for the types Z<sub>1</sub> + Z<sub>2</sub> use categories specified in ETAG 026-3.  
 ETA 21/0975, ETA 21/0976, ETAG 026-2 + ETAG 026-3.

### Performance

Provides effective acoustic containment.  
 Can provide up to 240 minutes fire resistance.

### Applications

Specially formulated for adhesion to a wide range of materials including: wood, metal, plastic, concrete, masonry and plasterboard materials.

A linear gap seal for gaps in wall and floor constructions and as a linear joint seal where wall and floor constructions abut.

A penetration seal around metallic pipes and electrical cables to reinstate the fire resistance performance of wall and floor constructions.

Sealing the perimeter around fire and smoke resistant air transfer grilles in doors, walls, ducts, floor and ceilings.

### Material

Polymer content increased for improved flexibility - tolerates differential movement in everyday service.

### Availability

Supplied in individual 310ml cartridges.

### Finish

White as standard. Other colours available to special order.

### Storage + cleaning

Store in cool dry conditions between 5°C - 30°C. Do not allow to freeze.

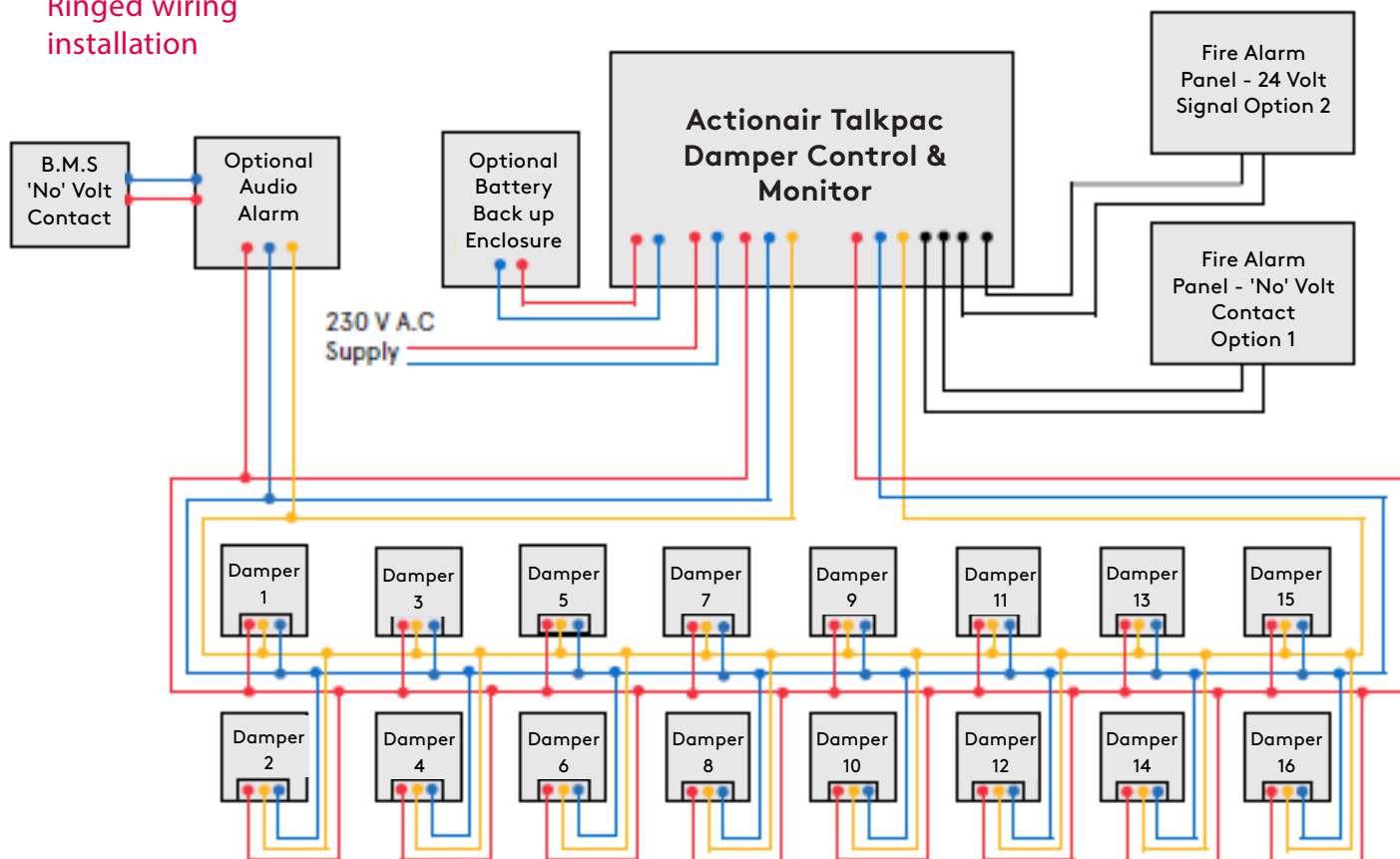
Water based - tools can be cleaned using soap and water.

# Wiring Diagrams

## Talkpac Damper Control System - Schematic Wiring Installations

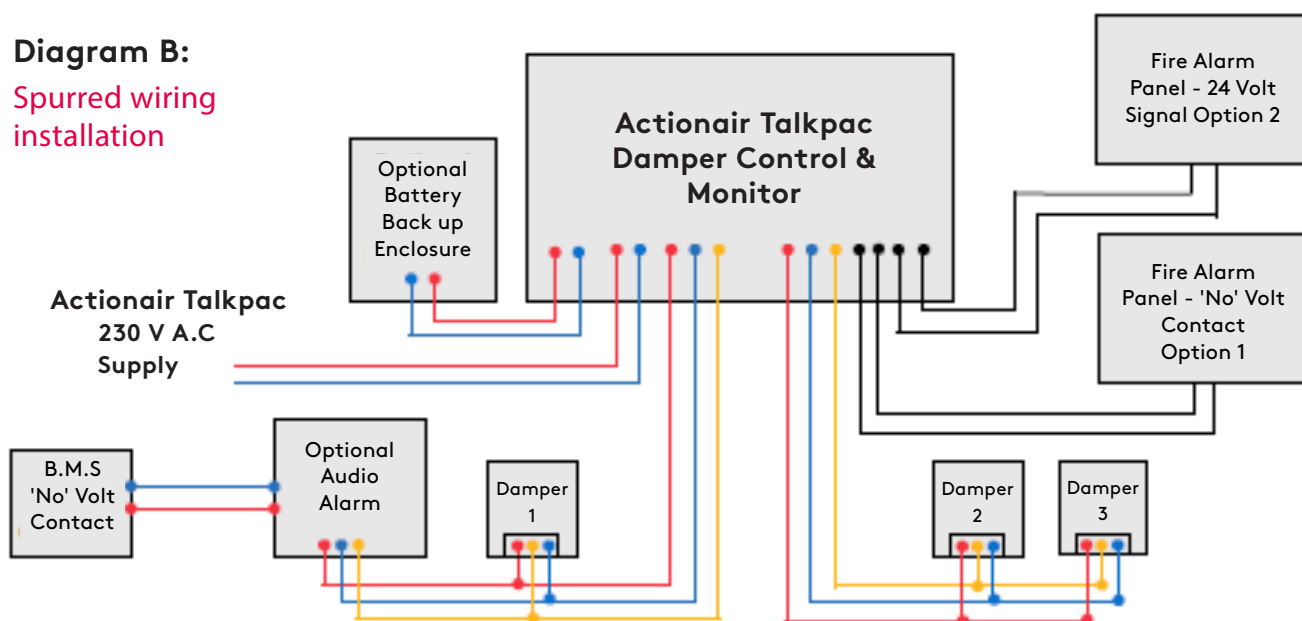
**Diagram A:**

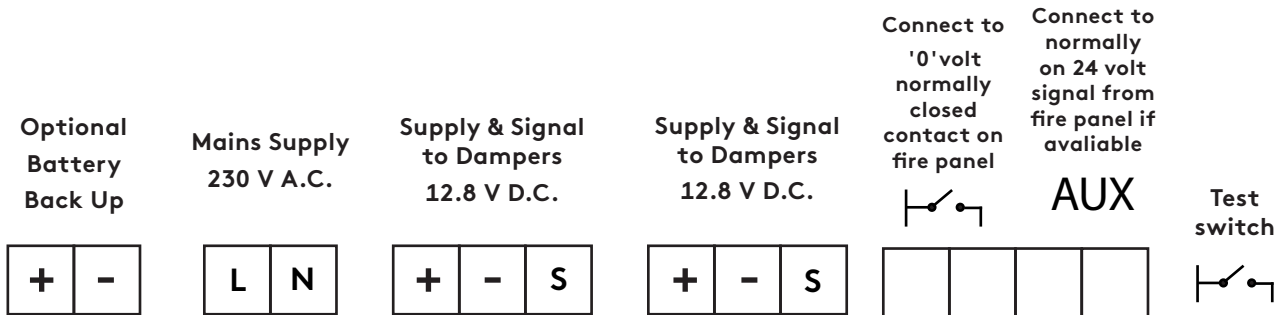
Ringed wiring  
installation



**Diagram B:**

Spurred wiring  
installation



**Diagram C:** Connections within Talkpac Damper Control + Monitor**ALARM INTERFACE  
OPTIONS**

Each DCM can control up to 16 air transfer grilles or dampers. Each air transfer grille or damper must be assigned its own address from 1 to 16. A shared address will cause the system to fail. The address of any damper can be changed by adjusting the rotary switch on the front of the actuator as shown in below.

As we are unaware of the placement of the individual dampers we cannot set the address to correspond with the damper control system. Each unit should only have 1 x no. 1, 1 x no. 2, 1 x no. 3, etc connected to it.

**PLEASE ENSURE YOU SET THE ADDRESS ON THE ACTUATOR BEFORE CONNECTING THE SYSTEM TO THE MAINS SUPPLY.**

This is done by using a small flat bladed screwdriver and turning the rotary switch.

Options shown: 1 2 3 4 5 6 7 8 9 A B C D E F O

Equates to: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

The pictures below show the location of the rotary switch:



## Wiring & Electrical Connections

### FIRE ALARM CONNECTION OPTIONS

"Talkpac" DCM units can be connected to fire alarm panels in two ways, the most popular of these being option 1, shown in diagrams "A, B & C", where the DCM sends its own signal to a "0" volt contact on the alarm panel. This requires no output from the fire alarm panel but in an alarm condition the normally closed contact opens and breaks the signal. The DCM instructs all dampers to close when the signal fails.

The second option shown in the same diagrams use a 24 volt signal generated by the fire alarm panel in normal conditions but which ceases in an alarm conditions. The loss of the signal triggers the DCM to instruct the dampers to close.

### OPERATION

In normal conditions air transfer grilles or dampers will be in the open state and the same number of green lights on the top row of the DCM as there are grilles or dampers connected, will be illuminated. This indicates that the grilles/dampers have been instructed to be open and that they have complied with that instruction.

During auto-cycling or manual testing the normal interface signal between the fire alarm panel and the DCM is interrupted. A red warning light flashes at the top of the DCM which then instructs the dampers to close. Initially the bottom row of green lights are illuminated to indicate that instruction to close has been given and if all grilles/dampers have closed the number of lights coincident with the number of grilles/dampers connected remain illuminated.

If after approximately 20 seconds one or more green lights are replaced by a red light on the middle row, a fault is indicated against that or those grille(s)/damper(s). The 20 seconds delay is caused by the DCM needing to interrogate each actuator in the system in turn and to receive each response.

The auto-cycle will automatically reset the DCM to give the instruction to open. Again any grilles/dampers that have not fully opened will cause red lights on the middle row to light up and the equivalent green light on the top row will be extinguished after about 20 seconds.

Manual testing can be undertaken without activating the fire alarm panel by disconnecting the alarm interface wiring, bridging the terminals marked.

Testing can then be undertaken using the rotary test switch shown in Diagram C.

## Maintenance

### AIR TRANSFER GRILLE MAINTENANCE

If a fault should develop on any air transfer grille, the cover grille or intumescent fire grille should be removed to expose the shutter plates and actuator. The wiring connections should be examined for looseness and refitted or tightened as necessary. The shutter plates should be checked for jamming due to distortion caused by impact damage or debris trapped in between the plates. If debris is causing a failure to close, reset the DCM to the open condition and clean the plates using a paint brush.

***Do not attempt to remove the actuator from the shutter plate assembly or to dismantle the shutter plate assembly.***

If the problem cannot be resolved contact the manufacturer. If a condition arises where all shutters fail to operate as instructed and only red lights are illuminated, refer to the Actionair fault finding chart.

### GENERAL MAINTENANCE

The auto-cycling feature of the "Talkpac" system does not usually allow dust and debris to accumulate in such a way as to inhibit the moving parts of the shutter plates or actuator. If accumulations regularly occur in air transfer grilles it suggests that the circulating air quality within the building is very poor and should be addressed as a serious health issue. Where this situation occurs in dampers mounted in ventilation ducts, it suggests that the in line filtration system is ineffective and should be investigated.

## Fault Finding

### PLEASE NOTE

It is important to be aware of the following information concerning the shutter control system when fault finding:

The top row of green lights of the control unit indicate:

- a) Initially that the control unit has instructed the damper or shutter to open.
- b) 20 seconds later if the green light is still illuminated the damper or shutter has successfully executed the instruction.

The centre row of red lights marked NULL on the control unit when illuminated indicate either:

- a) Failure of a shutter to follow the last command from the control unit

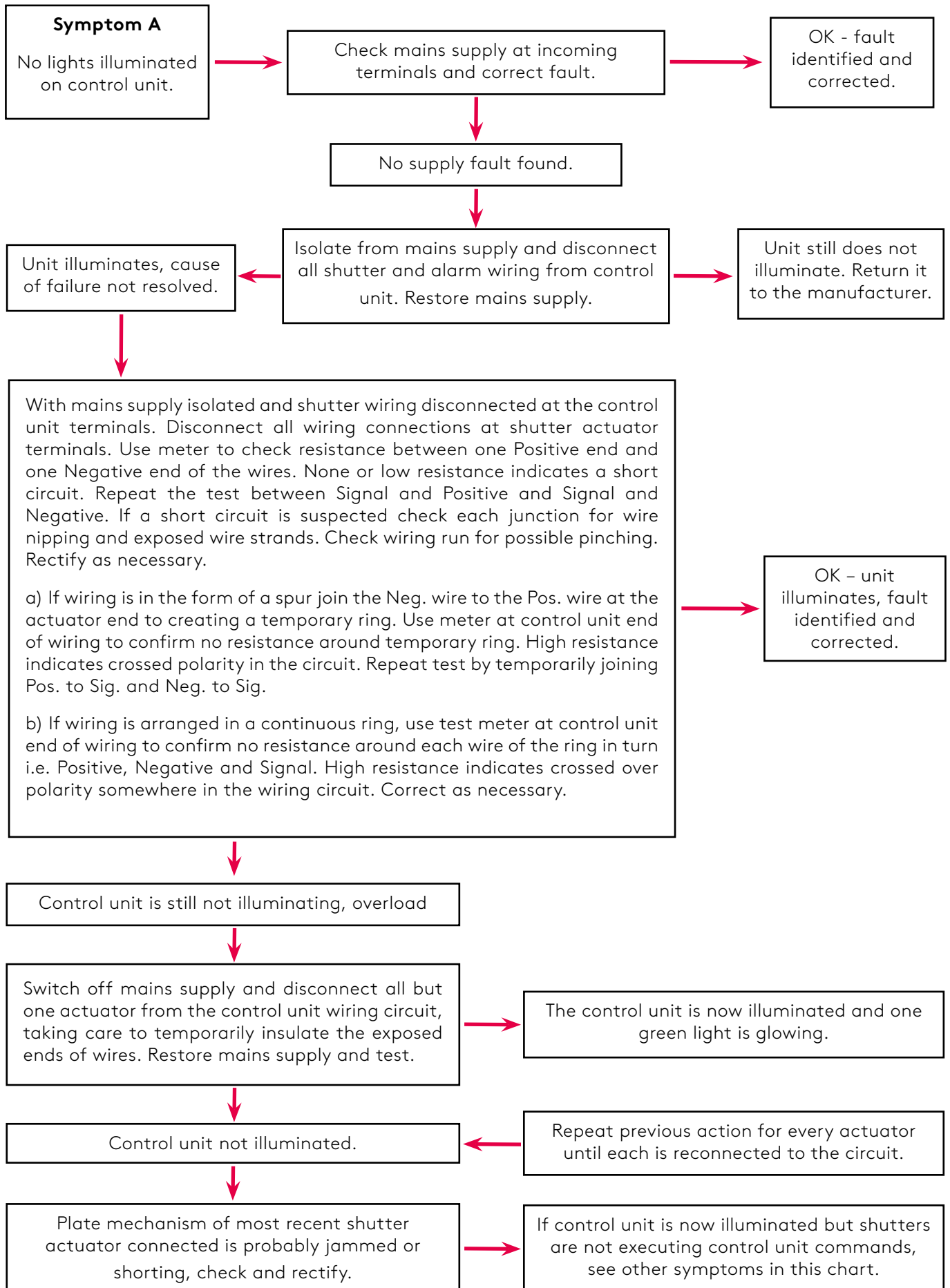
if connected. The red light may take 30 seconds to illuminate after the command was transmitted whilst the system interrogates and responds for each channel.

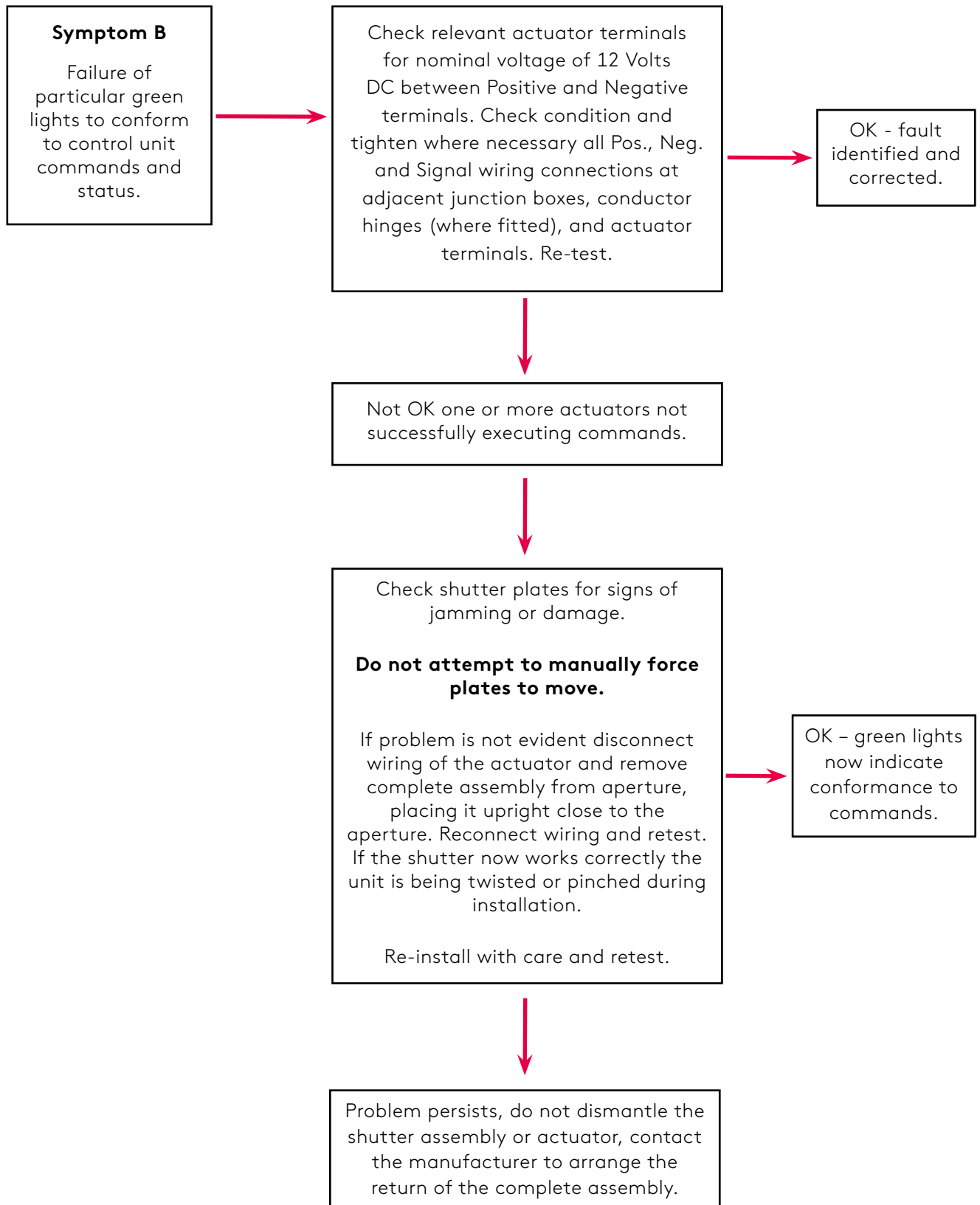
b) No shutter is connected to this channel. The bottom row of green lights of the control unit indicate:

- a) Initially that the control unit has instructed the damper or shutter to close.
- b) 20 seconds later if the green light is still illuminated the damper or shutter has successfully executed the instruction. Ensure that sufficient time is allowed for the system to stabilise when initially powered up. Also allow sufficient time for control unit commands to be received by the actuators and confirmation from the shutter or damper actuators sent back to the control unit.

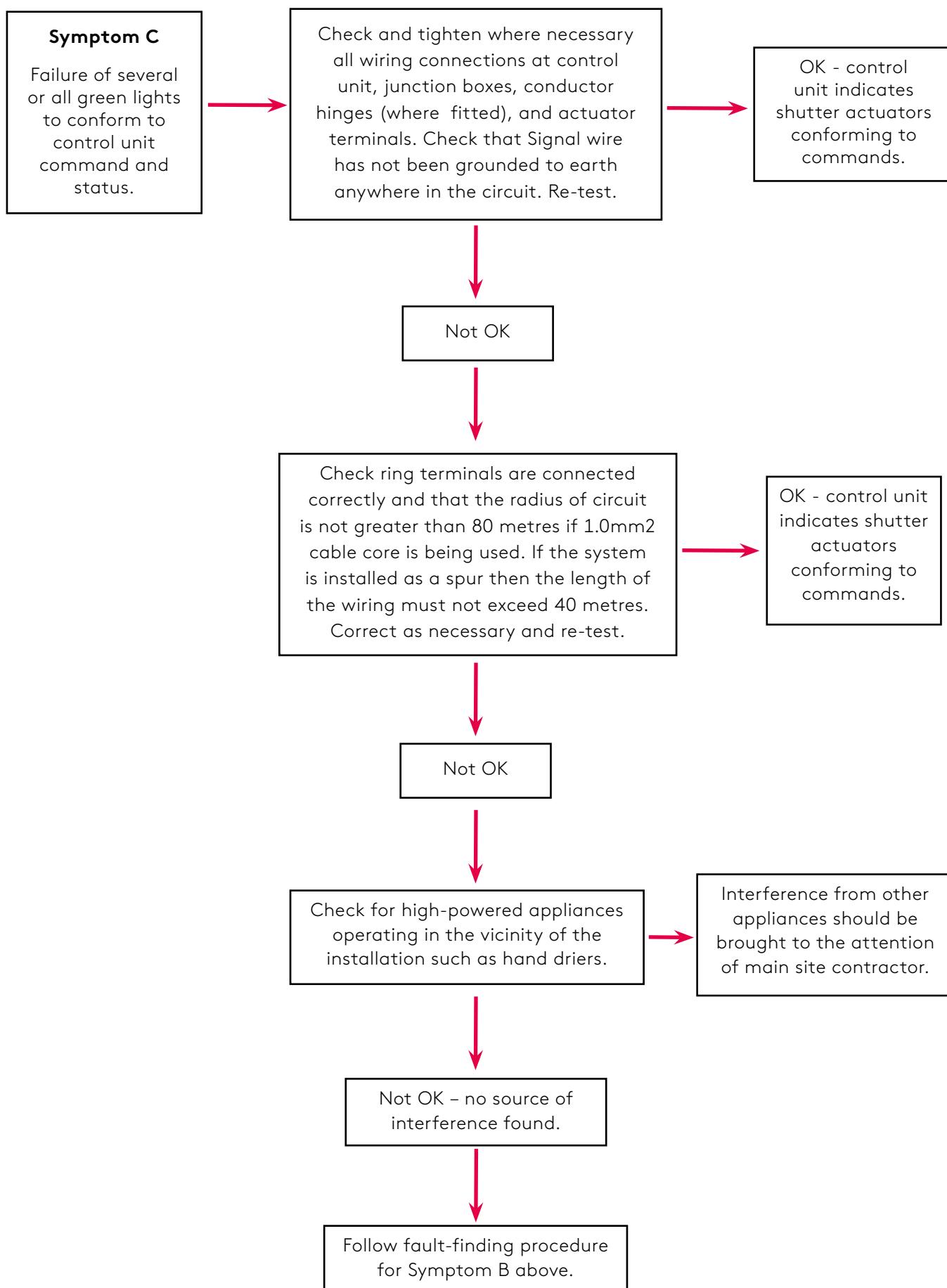
Before conducting a lost power "Fail Safe" test, at least 4 minutes must be allowed from powering up the system in order to ensure that all capacitors have been adequately charged.

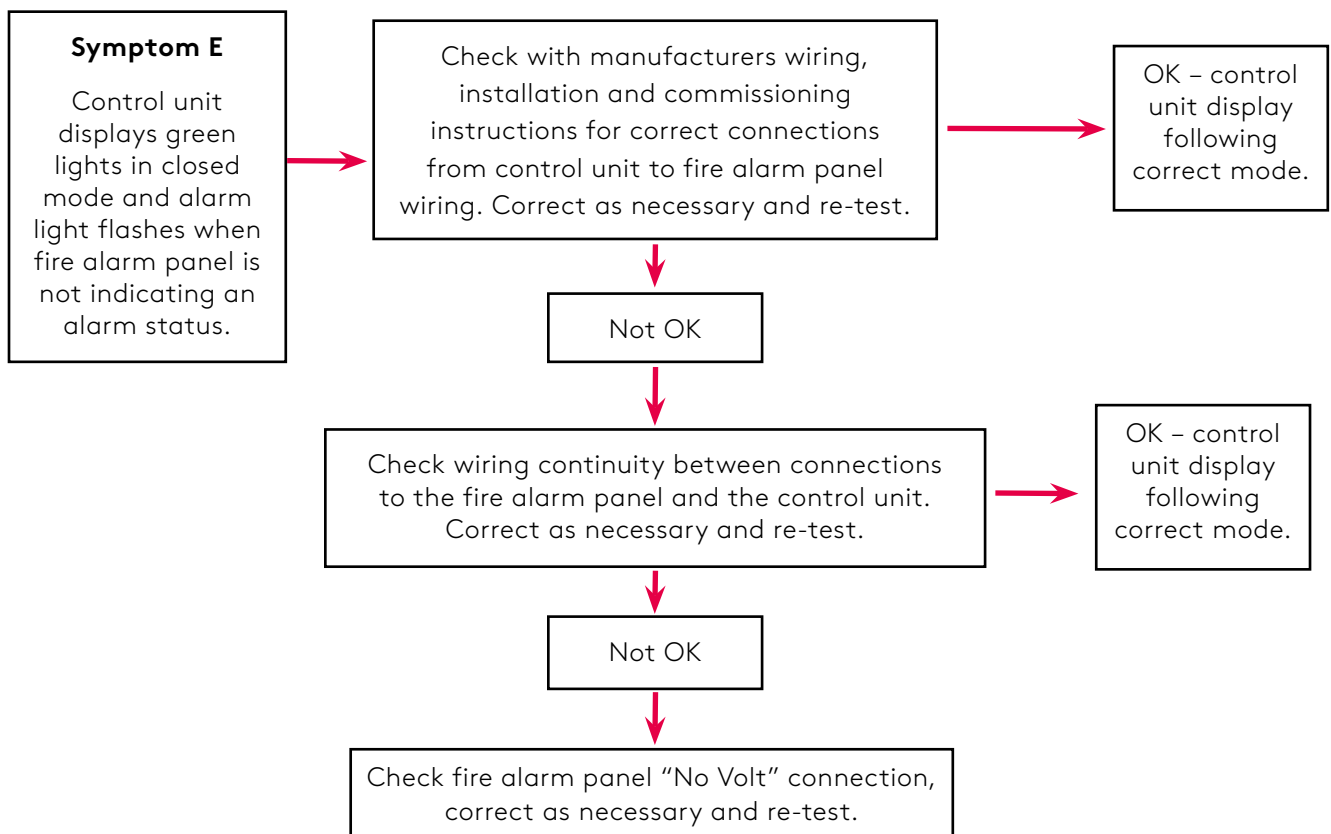
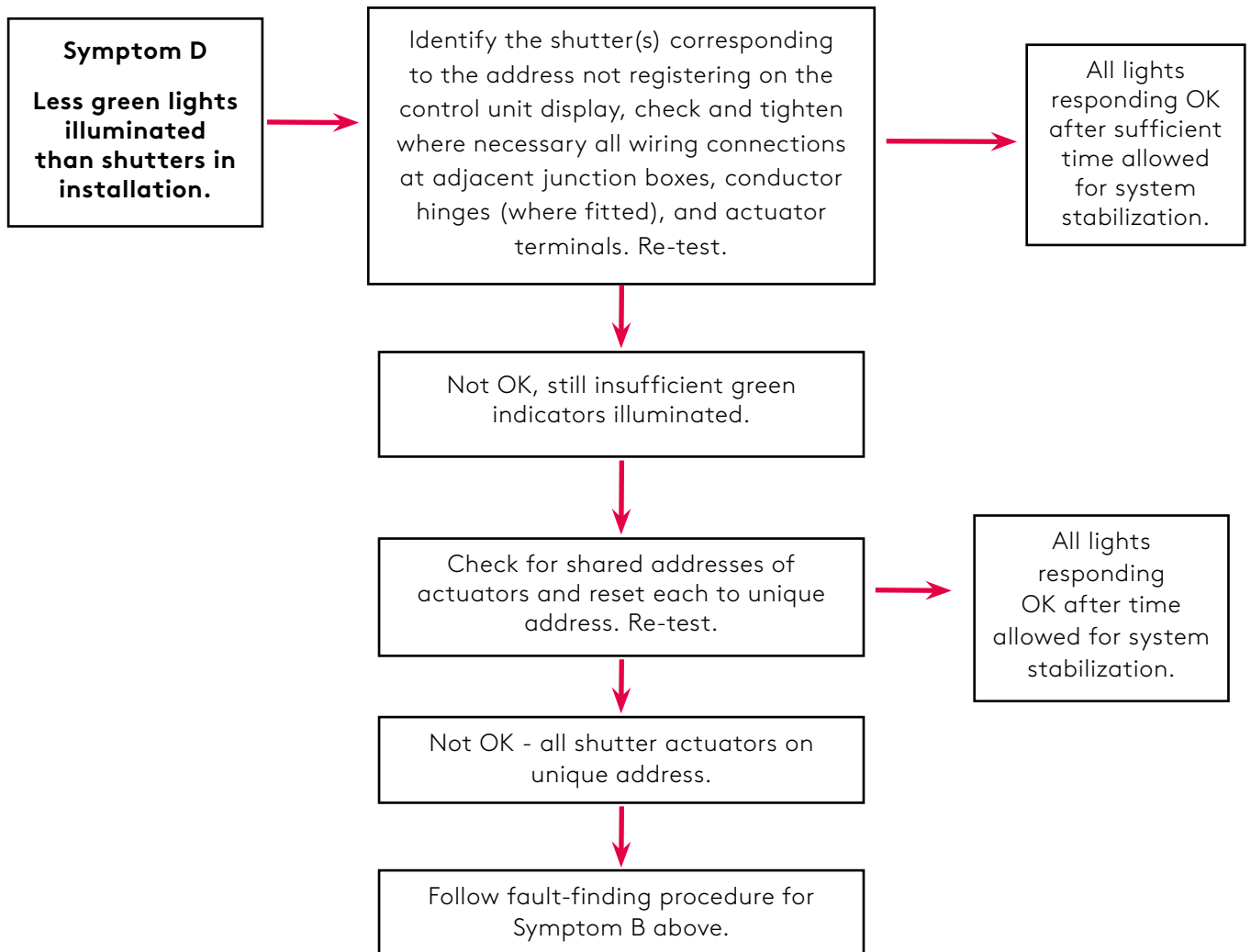
Fault symptoms on this chart have been arranged in the most likely order that they may be encountered during commissioning.

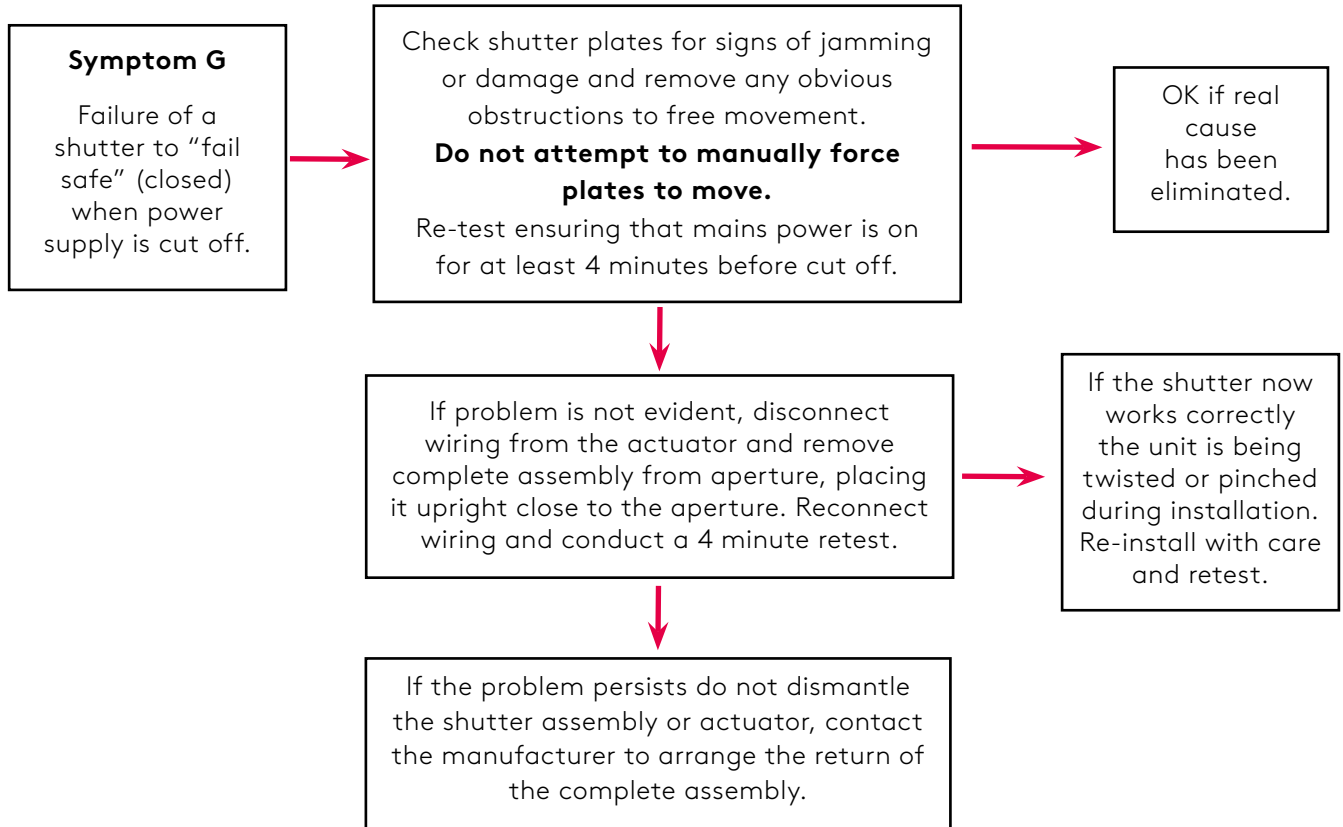
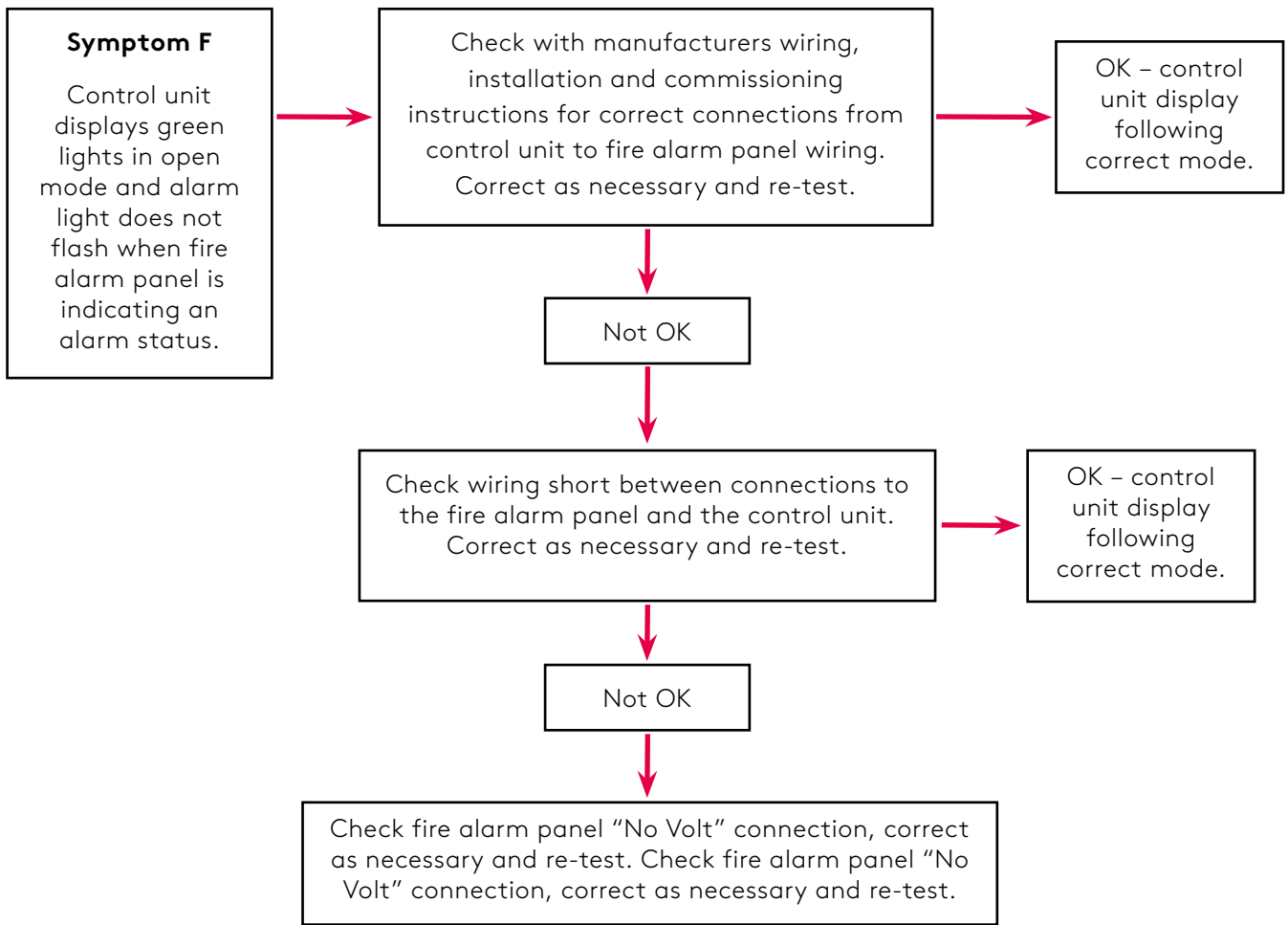








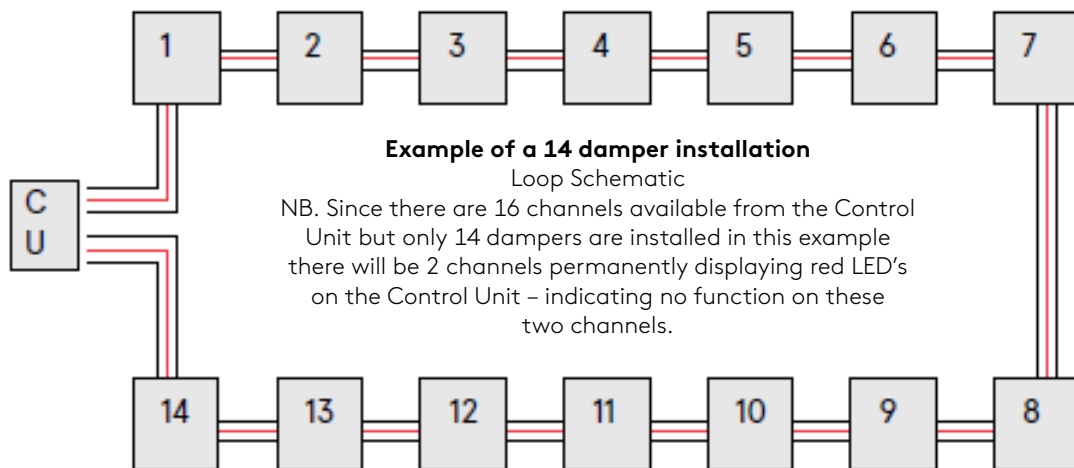




# SEQUENTIAL TEST METHOD TO IDENTIFY FAULTS ON Talkpac LOOP INSTALLATIONS

## IMPORTANT NOTES:

1. There must be an adequate 240 Volt AC supply to the Control Unit.
2. The DC supply at any point around the loop should not be lower than 10.5 volts.
3. Cable should not exceed the lengths recommended by Actionair for wire cross sectional areas used in the installation.
4. This test method will only work if the damper addresses are coincident with the actual order of dampers around the loop. Check that addresses are in the actual order before starting the test sequence, correct as necessary by changing the addresses on the actuators.
5. Make sure that no dampers share the same address.



## Example of fault:

Symptoms – Control unit displays green lights for all dampers in circuit when in closed mode.

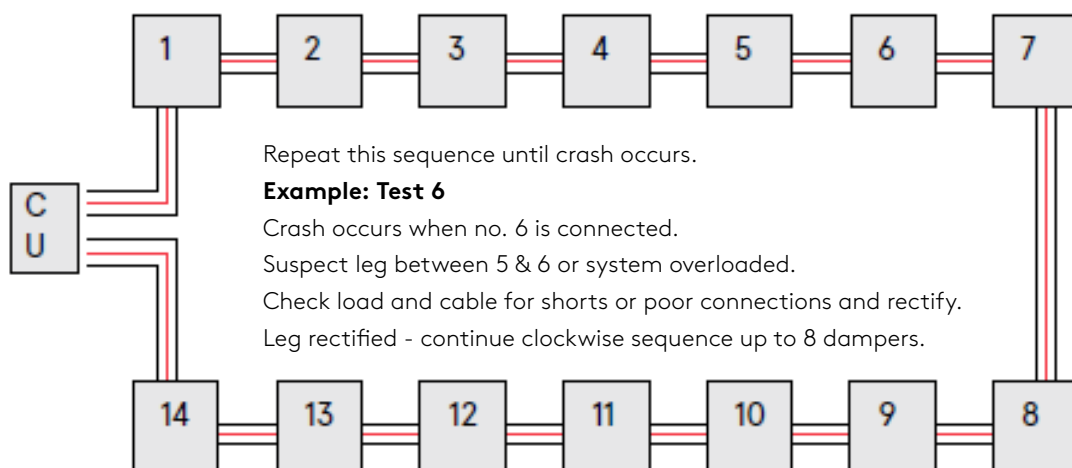
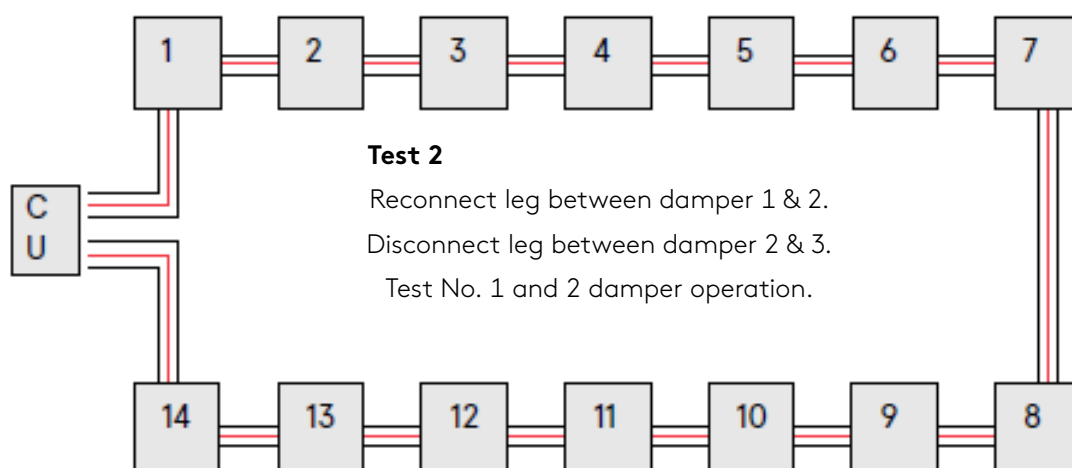
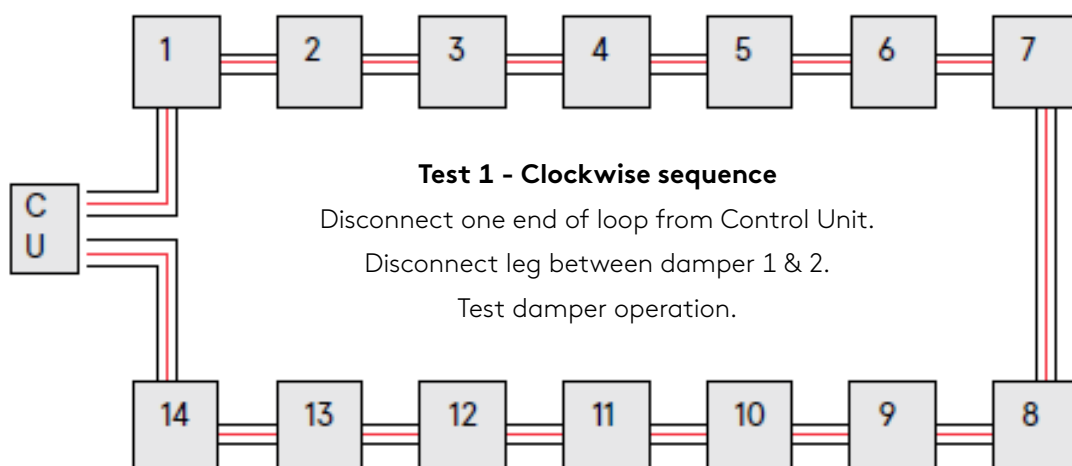
When open mode selected, green open LEDs flash but system keeps defaulting to green closed LEDs.

The system is doing what it is designed to do. Failing Safe - it recognises that a fault exists and therefore will not allow the fire and smoke dampers to open until the fault is rectified.

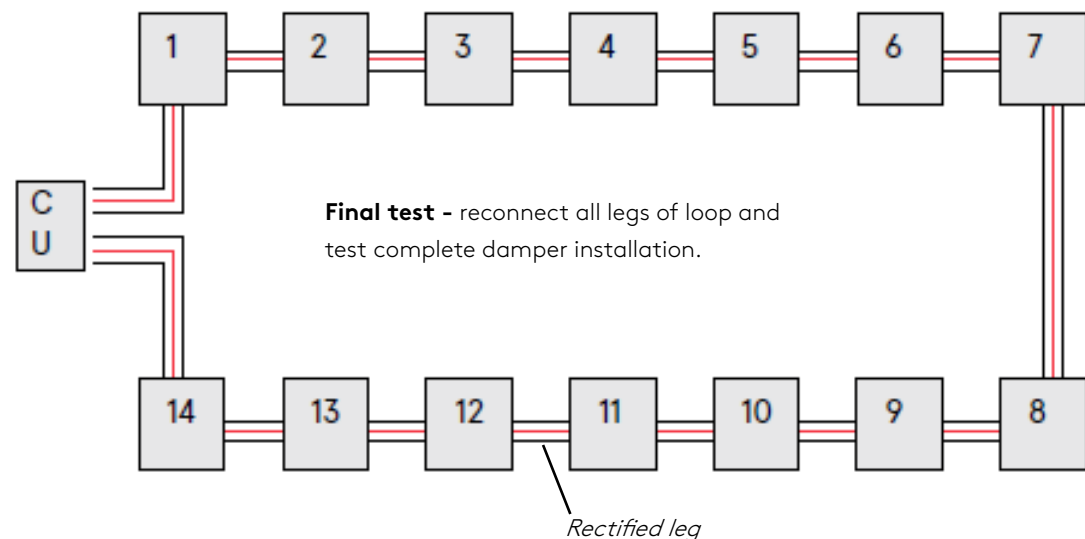
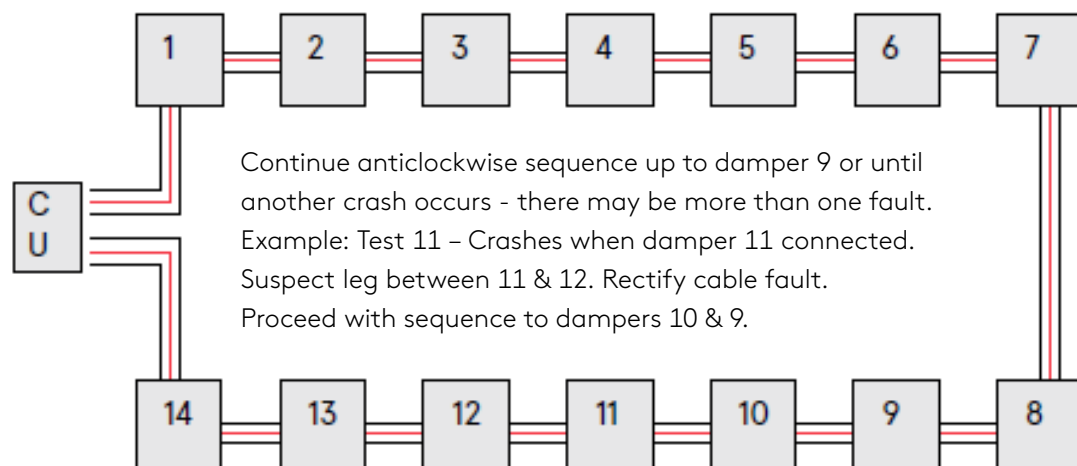
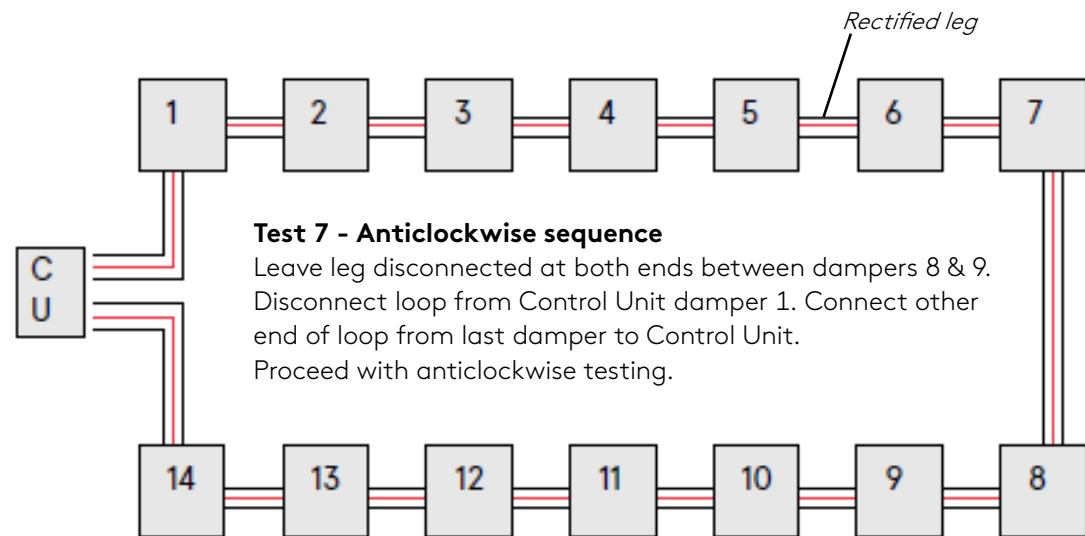
## Possible causes:

- AC supply to Control Unit is inadequate – check and rectify if necessary.
- Short circuit on signal or supply cables in loop.
- Dampers sharing same address.
- Poor connections at cable junctions.
- Too much load on the Control Unit.

## SEQUENTIAL TESTING PROCEDURE

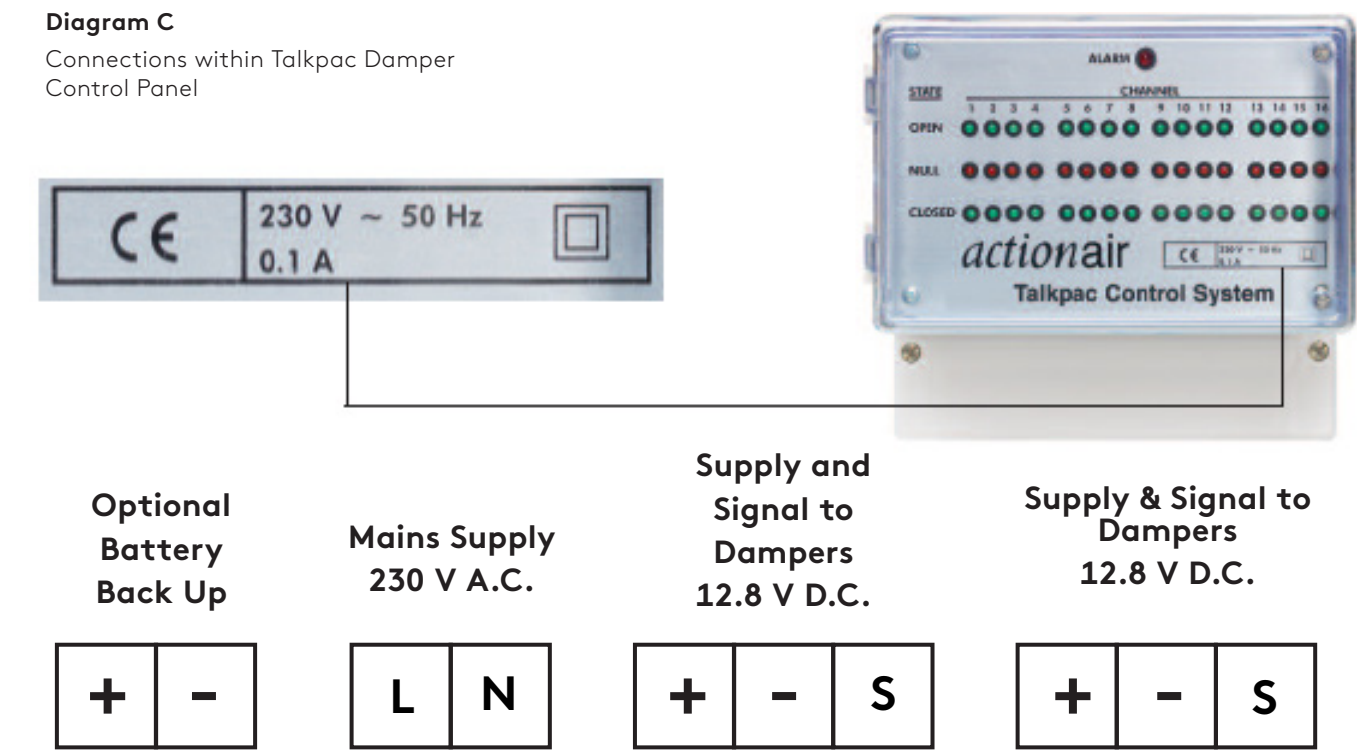


## SEQUENTIAL TESTING PROCEDURE



# Talkpac Damper Control System Schematic Wiring Installations

**Diagram C**  
Connections within Talkpac Damper Control Panel



The function of the actuator is to open the damper in accordance with the alarm status as interpreted by the panel.

(The actuator uses a geared electric motor which provides a powerful action but with minimal current consumption, typically 5 milliamps when the damper is in the open position and 200 milliamps momentarily when in the process of opening.)

On power failure, energy stored within the actuator PCB capacitor is tapped to drive the motor to the closed position. In the event of an alarm the panel instructs the actuator to close using the power supply from the panel. A Phototransistor confirms the final position of the damper and sends a signal to the panel, which illuminates a green LED on the bottom row. This indicates that the damper is closed. If no signal is received from the actuator by the panel within 10 seconds, a fault is assumed and a middle row red LED is illuminated.

Alarm cancellation or power restoration will trigger the panel to signal the actuator to move the damper to the open position, the final position of the damper being sensed by another photo transistor and reported to the panel for display.

Should the actuator not receive a signal from the panel within a 10 second period, it will assume failure and close the damper.

CE Marking EMC and LVD (Electro Magnetic Compatibility and Low Voltage Directive).

Actionair smoke control systems have been successfully tested in accordance with the requirements of EMC & LVD and, therefore, bears the CE Mark (Conformite European).

Copies of the relevant test reports are available on request.

Actionair electro-mechanical systems should only be installed by qualified and competent technicians, working strictly to the relevant Actionair fitting instructions.

Any proposed deviation from the original design or installation instructions must be sanctioned by Actionair's technical staff.

System users are advised that servicing or retrospective installation modifications must be undertaken by the installers, or a technically competent contractor who is totally familiar with the relevant system and is in possession of the appropriate Actionair technical data sheets.

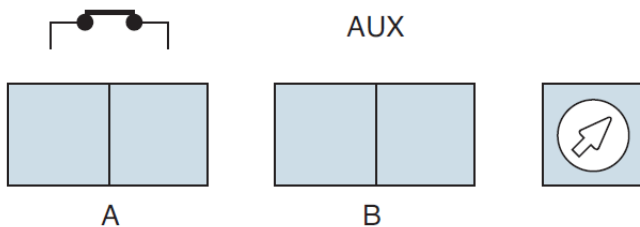


## Alarm Interface Options

### A or B

Connect to  
a volt free  
(Normally closed)  
contact on  
Alarm Panel  
( Opens on Alarm)

Connect to  
24V DC signal  
from Alarm Panel  
(Normally on,  
off in Alarm)



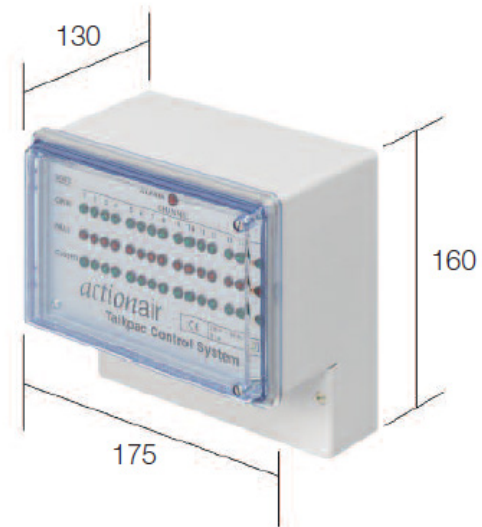
#### Specification (ACS-D)

1. The TransShield ACS-D 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.
2. The non-vision grilles each side of the sliding plate assembly are manufactured from P.V.C slats with an intumescent core. An increase in temperature resulting from either flames or hot gases causes the grille to intumesce, fusing together to provide an effective barrier to 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.
3. TransShield ACS-D are available in 3 sizes, 200mm x 200mm, 300mm x 300mm and 400mm x 400mm having respective effective free area of 0.012m<sup>2</sup>, 0.027m<sup>2</sup> and 0.061m<sup>2</sup>.

#### Specification (ACS-W)

1. The TransShield ACS-W 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.
2. The wall mounted unit incorporates a non combustible housing and intumescent damper: white painted press steel grilles are provided on each side. An increase in temperature resulting from either flames or hot gases causes the damper 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 2 hour and the leakage requirements of BS476 Part 31: Section 31.1.
3. TransShield ACS-W are available in 3 sizes, 200mm x 200mm, 300mm x 300mm and 400mm x 400mm having respective effective free area of 0.012m<sup>2</sup>, 0.027m<sup>2</sup> and 0.061m<sup>2</sup>.

**Talkpac Damper Control Panel  
Dimensions (Millimetres)**



#### Regulatory Requirements

Approved Document B to the Building Regulations (England and Wales) Part E of the Scottish Technical Standards and Part E to the Building Regulations (Northern Ireland) give the requirements for fire and smoke containment with respect to 'means of escape'.

A study of these requirements shows that practically all internal fire door assemblies are required to prevent the passage of cold smoke. This needs to be considered separately from performance in relation to fire and hot smoke. Air transfer grilles must not compromise the smoke integrity of a doorset.

#### Relevant Standards

- BS 476 Pt.22: 1987 Methods of determination of the fire resistance of non-loadbearing elements of construction
- BS 476: Section 31.1 Methods for measuring smoke penetration through a doorset and shutter assemblies
- BS5588: Fire precautions in the design and construction of buildings. (An Approved Document for compliance with Building Regulations).