

# Actionair Span Installation Guide

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## Drawings

Please visit our website to download the installation drawings, which are located on the relevant product download section.

## Applies to...

Actionair SmokeShield PTC

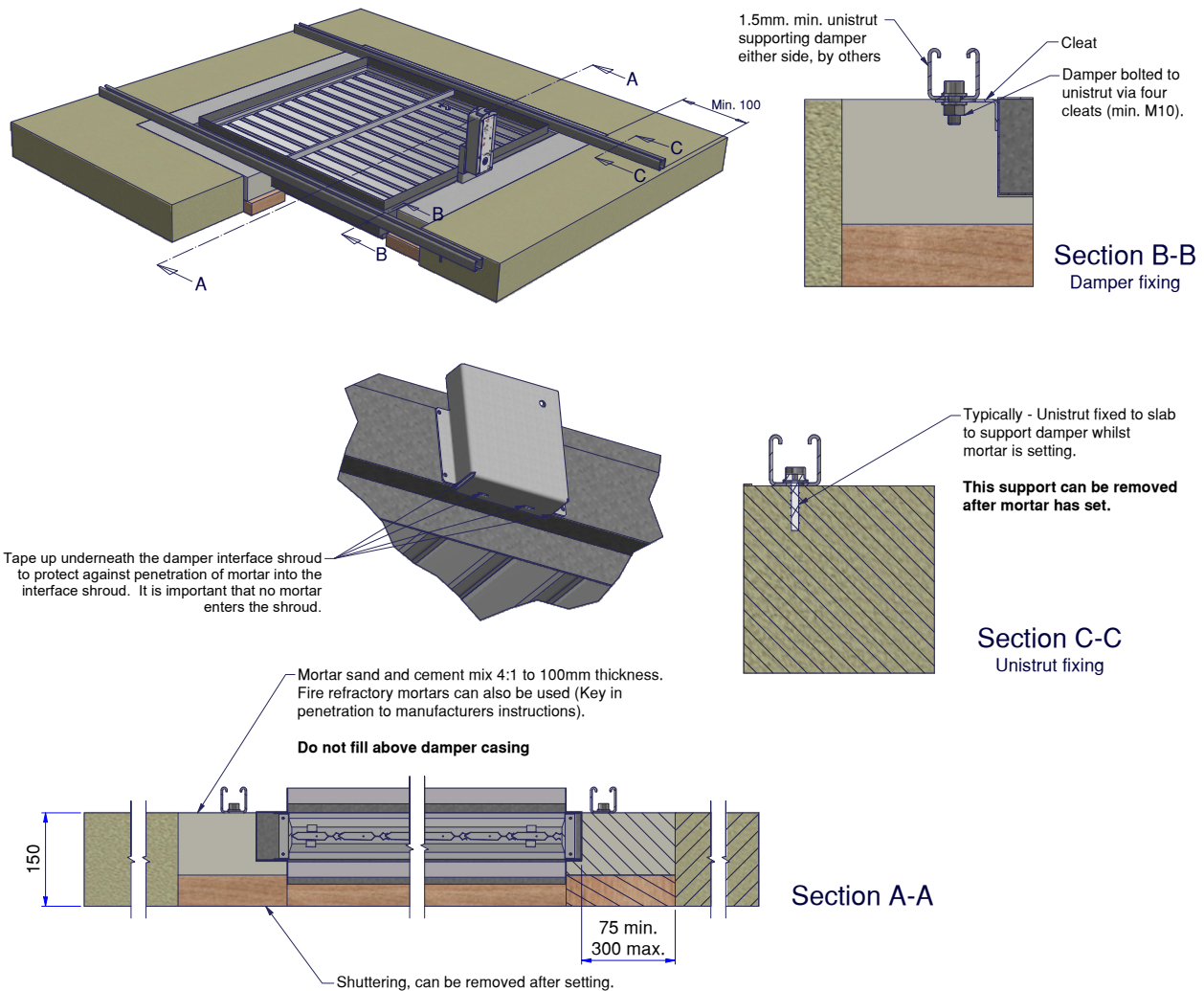
## Health and safety

- This process must be undertaken by competent persons. 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 eyewear, 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.
- Actuators: All wiring should be carried out in accordance with the wiring details provided by the IEE and BS regulations and by a competent person. Care must be taken when installing and inspecting dampers, as they are likely to close without warning due to loss of electrical power or a temperature rise in the ductwork. This is their prime function. Do not insert any items, fingers or limbs between the blades. Larger dampers must be handled in accordance with current regulations and good practice due to weight.

## CE Installation Method Overview

Application	Installation Method
	Actionair SmokeShield
Horioztional Damper Installation SPAN (access side above)	Page 3, [AA/F12368]
Horioztional Damper Installation SPAN (access side below)	Page 4, [AA/F 12864]

- The methods in this manual should be followed to ensure a CE-marked installation. This CE installation document covers single dampers only. If a multiple damper assembly or, if a non-standard install is required, talk to us as early as possible in the project to get important stakeholders engaged and ensure an installation solution can be found.
- The instructions are based on the tested method using Actionair Smoke Shield PTC fire/smoke dampers and Firetherm products.
- Our SmokeShield dampers are designed to be used with fire separating elements to maintain fire compartments. The SmokeShield is an actuated failsafe close damper with low smoke leakage, often referred to in the industry as a Fire/Smoke damper.
- Under the Fire Damper Product standard BS EN 15650 our Fire Damper products are tested to BS EN 1366-2 and classified under BS EN 13501-3.
- For smoke control, the product you use should be tested to BS EN 12101-8 and drive open, drive closed without failsafe position, see our website for information on the Actionair SmokeCommand smoke control damper documentation and suitable installation methods.

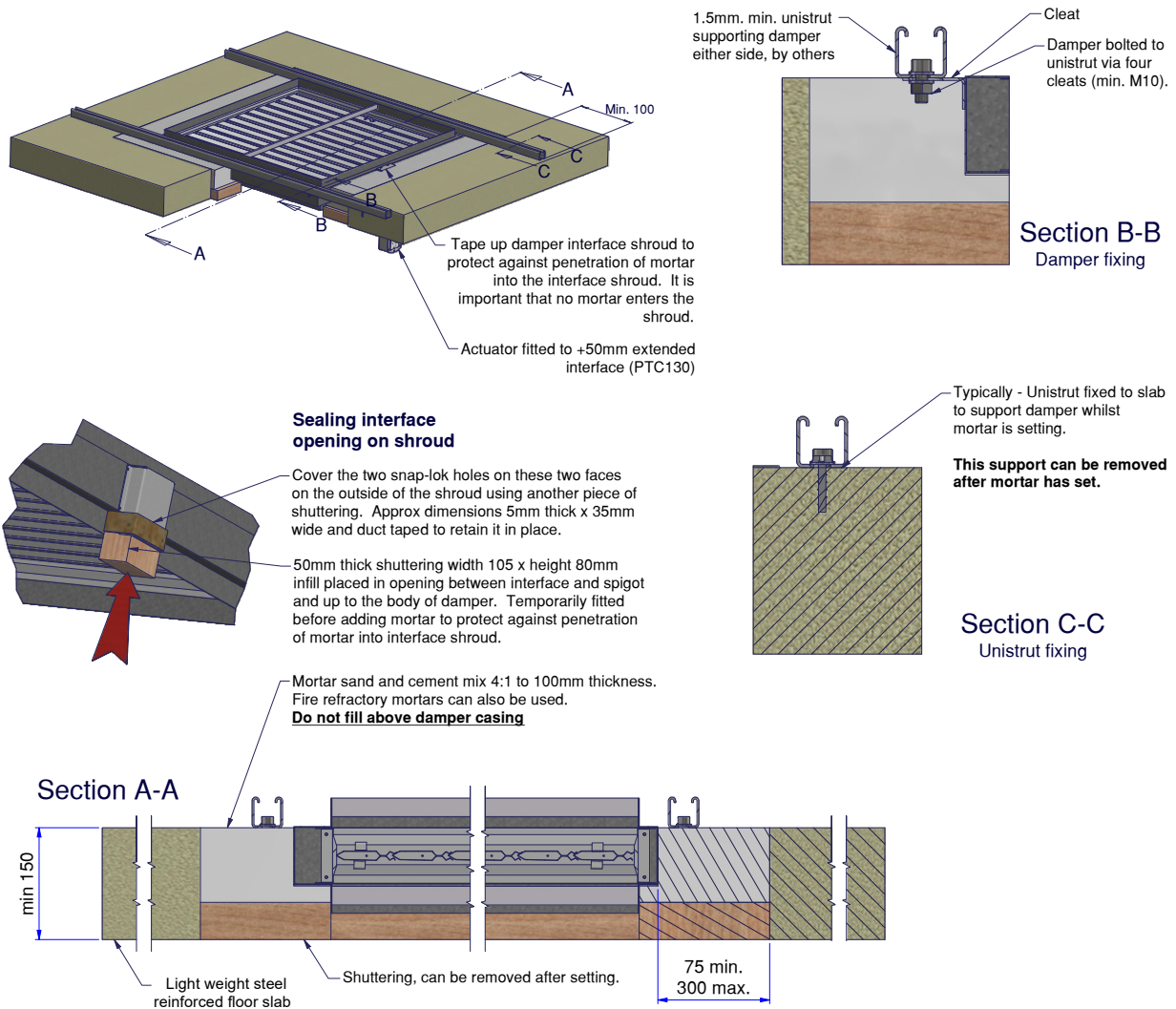


## Horizontal Damper Installation SPAN (access side above)

Actionair SmokeShield PTC - [AA/F 12368]

### Installation Method

1. Bolt Unistrut (1.5mm minimum thickness) supports to 4 damper cleats and position damper in aperture with minimum M10 bolts.
2. Fix Unistrut supports to the floor with minimum  $\varnothing 6\text{mm}$  fire rated fixings.
3. Shutter underneath with 50mm thick Shutterbatt. **IMPORTANT** – to prevent any compound pouring into the damper interface shroud and rendering the damper inoperable the following **MUST** be followed: Do NOT remove damper interface transit plate. Tape up underneath damper interface shroud. Do NOT fill above damper casing
4. Using thick consistency compound, trowel in the first layer of approximately 25mm, all around the damper casing, making sure all the gaps are fully sealed, as per industry standard.
5. When the first layer has set, pour in the next level to 100mm thickness. **IMPORTANT**; Compound must not be too watery or runny as it risks penetrating into the interface shroud. Do NOT fill above damper casing
6. When compound has fully set, remove damper interface transit plate and check the internal is free from any debris, remove any debris.
7. Follow the actuator installation procedure detailed in this document.



## Horizontal Damper Installation SPAN (access side below)

Actionair SmokeShield PTC - [AAF 12864]

### Installation Method

1. Bolt unistrut (1.5mm minimum thickness) supports to the 4 damper cleats as shown and position damper in aperture with minimum M10 bolts. Fix unistrut to floor using suitable fire resisting fixings.
2. Remove the transit plate.
3. Tape up damper interface shroud to protect against penetration of compound into the interface shroud. It is important that no compound enters the shroud.
4. Cut a temporary infill block from the 50mm thick Firetherm shutterbatt (140kg/m<sup>3</sup> density) width 105 x height 80mm. Place in opening between interface and spigot and up to the body of damper. Temporarily fitted before adding compound to protect. We advise checking with the shutterbatt manufacturer to ensure product thickness is suitable for loadbearing.
5. Cover the snaplock holes with another piece of shutterbatt, 5x35mm thick and duct tape in place.
6. Shutter underneath with 50mm thick shutterbatt.
7. Using thick consistency compound, trowel in the first layer of approximately 25mm, all around the damper casing, making sure all the gaps are fully sealed, as per industry standard
8. When the first layer has set, pour in the next level to 100mm thickness. IMPORTANT; Compound must not be too watery or runny as it risks penetrating into the interface shroud; do NOT fill above damper casing against penetration of compound into interface shroud.
9. When compound has fully set, remove the shutterbatt temporary infill block and check the shroud is free from any debris, remove any debris.
10. Follow the actuator installation procedure detailed in this document.

# Actuators

## Control Mode Installation Procedure

1. Remove transit plate and recycle.
2. Slide the interface and mode assembly into the shroud. Ensure the slots in the interface casing and the drive coupling located on the rear of the interface are in line.
3. Push the assembly fully home until the interface sprung retaining pin engages through the locating hole in the damper shroud (snaplock™).
4. The control mode can be fitted in any of three orientations i.e. vertically down, horizontally and vertically up (For height restrictions). This can easily be carried out by the following:
5. Remove and retain screw (8mm A/F) and washer, through the position indicator on the control mode.
6. Remove the control mode and interface adapter plate.
7. Taking care not to disturb the drive hexagon. Replace the interface adapter plate and control mode in the new orientation.
8. Replace the washer and screw tight (Max 5Nm) Select a suitable position for the Electrical Thermal Release (ETR) to be mounted through the ductwork.
9. Ideally this should be in the top half of the duct and/ or above the level of the interface.
10. Apply the self-adhesive template (located on the rear of the ETR) and drill the necessary holes (Ø3mm & Ø9.5 & Ø11mm). Push the ETR through the duct and ensure both screws are used to hold it in position. Both screws should be tightened fully to ensure that both sections of the ETR are closed together. It is a safety feature, if both sections are not closed the unit will not operate. For ductless installations the ETR should be fitted onto the damper spigot (not casing) above the damper interface shroud and in accordance with the fitting instructions. If the ETR is not fitted in the exact manner described above, the unit will not operate.
11. The damper should be manually reset and released using the winder provided to ensure that correct mechanical operation is achievable. It is possible to mechanically lock open the SmokeShield PTC damper to allow air to pass through it using the winder provided, this may be necessary if electrical power isn't available yet. The ETR is not operable in this instance, the damper will not release automatically if the temperature rises or a fire occurs.
12. The unit must be wired as detailed. When power is available, the unit must be checked for correct electrical operation. Power on to reset, power off to release.
13. The unit must also be checked by pushing and holding the test switch on the ETR to confirm that the damper releases. When pressure is removed from the switch the damper resets. This may also be done after the initial installation test, to provide periodic operation of the damper to simulate actual fail-safe release under smoke/fire conditions.
14. The ETR cable must not cut to shorten or lengthen, and care must be taken not to damage it. Either will render the unit inoperable and void any warranties. This is due to a built in safety feature.





# Periodic Maintenance

## Manufacturer Recommended Service Intervals

- After commissioning and handover (see DW145 check sheet), in order to remain compliant with 15650:2010, we recommend that you follow a regular service and inspection programme to ensure correct operation of dampers in the event the damper is required to actuate.
- In addition to regular physical inspections (in accordance with 15650:2010) we recommend using a dedicated damper control panel with a digital reporting mechanism (such as an Actionpac LNS system) to frequently monitor and report on regular remote damper testing.
- Ensure maintenance is performed in line with the latest best practice and relevant local or specialist guidance.
- Our recommended service intervals for life safety products are as follows:

Interval	Action	Competence
6 Months	Check Actuator Wiring (if applicable) for Damage	Specialist Persons
6 Months	Check Limit Switch Wiring (if applicable) for Damage	Specialist Persons
6 Months	Check Damper Cleanliness, Clean and Lubricate if necessary.	Specialist Persons
6 Months	Check Condition of Blades and Seals, report and rectify if necessary.	Specialist Persons
6 Months	Check for blade obstructions	Specialist Persons
6 Months	Check Damper Release Mechanism (through activation or release of the ETR or Thermal Fuse Device)	Specialist Persons
6 Months	Check damper is left in normal operational position after inspection.	Specialist Persons
Monthly	Complete actuation of damper from control panel (if installed) and check all faults. Consult specialist persons to investigate any reported faults.	Facility Manager

- \*Specialist Persons: A recognised and experienced person with prior experience in the inspection and assessment of the functional safety of smoke and fire damper products. If in doubt, please consult with our technical support team for advice. To talk about our OEM maintenance inspections, contact our nationwide service team.

## BS EN 15650:2010 - Ventilation for Buildings

### - Fire Dampers

- Section 8.3 states regular testing/ inspection should be undertaken to meet regulatory requirements, or at intervals not exceeding six months.
- A comprehensive example of the maintenance procedure is given in Annex D of the standard. Some

automatic systems may allow more frequent testing (48hr or less) and this may be required by a national standard.

## Approved Document B, Volume 2

- Clause 10.12 states adequate means of access must be provided to allow inspection, testing and maintenance of both fire damper and its actuating mechanism.

## BS 9999:2017 - Code of Practice for the Fire Safety in the Design, Management and Use of Buildings - Annex I

### Smoke Control Systems

- For means of escape states actuation of the system should be simulated once a week. It should be ensured that any fans and powered exhaust ventilators operate correctly, smoke dampers close (or open in some systems), natural exhaust ventilators open, automatic smoke curtains move into position, etc.

### Three Monthly

- In addition to the checks recommended in V.2, V.3 and V.4, the actuation of all smoke control systems should be simulated once every three months. All zones should be separately tested and it should be ensured that any fans and powered exhaust ventilators operate correctly, smoke dampers close (or open in some systems) etc.

### Yearly

- In addition to the following checks should be made for annual inspections and tests of the following to be carried out by competent persons, for any defects to be logged and the necessary action taken, and for certificates of testing to be obtained.
  - Fire detection and fire alarm systems;
  - Self-contained luminaires with sealed batteries, if more than 3 years old;
  - Sprinkler, drencher and watermist systems;
  - Smoke ventilators and smoke control systems;
  - Fire dampers

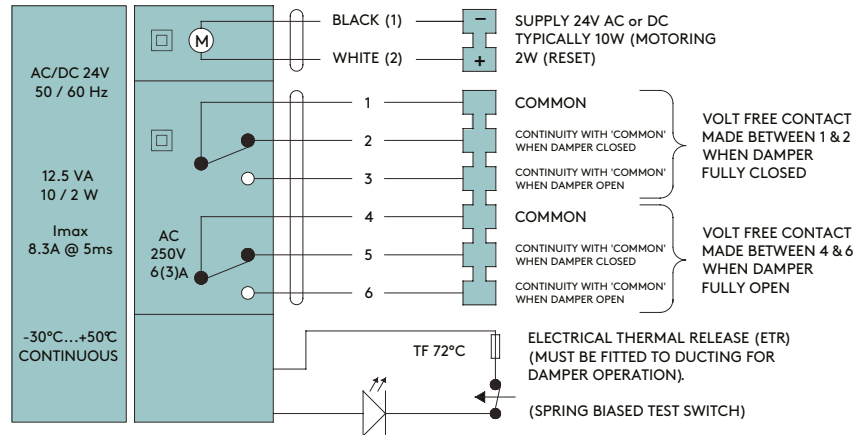
## BS 9999:2017 - Code of Practice for the Fire Safety in the Design, Management and Use of Buildings - Annex W

Maintenance of air conditioning and ventilation equipment including air filters, motors, fire dampers and their controls, smoke detectors and alarms is of paramount importance both in preventing fire and in ensuring that measures taken to mitigate its consequences are effective when needed. Arrangements should be made for all fire dampers to be tested by a competent person on completion of the installation and at least annually, and to be repaired or replaced immediately if found to be faulty. Spring-operated fire dampers should be tested annually and fire dampers situated in dust-laden and similar atmospheres should be tested much more frequently, at periods suited to the degree of pollution.

# Wiring Diagrams

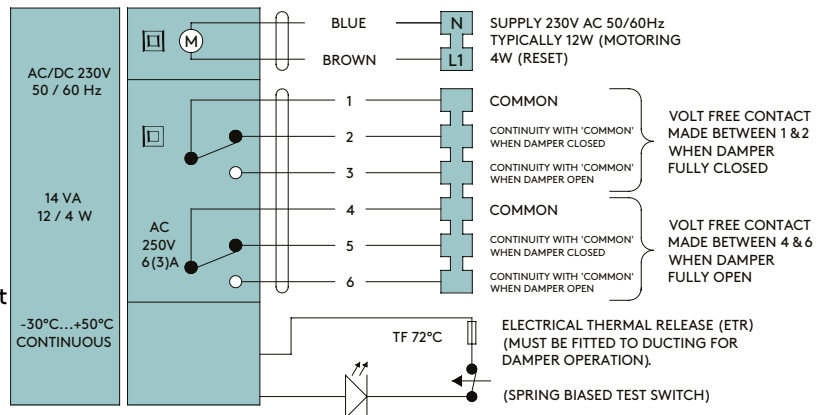
## Mode 5 PTC 24V

Supply On – Damper motors open.  
 Supply Off – Damper spring closes.  
 Electrical Thermal Release.  
 External mechanical position indicator with pointer.  
 Close Time ≈ 22 secs.  
 Open Time ≈ 60 secs.  
 (Connect 24V via a safety isolating transformer.)  
 IP54 Rated.



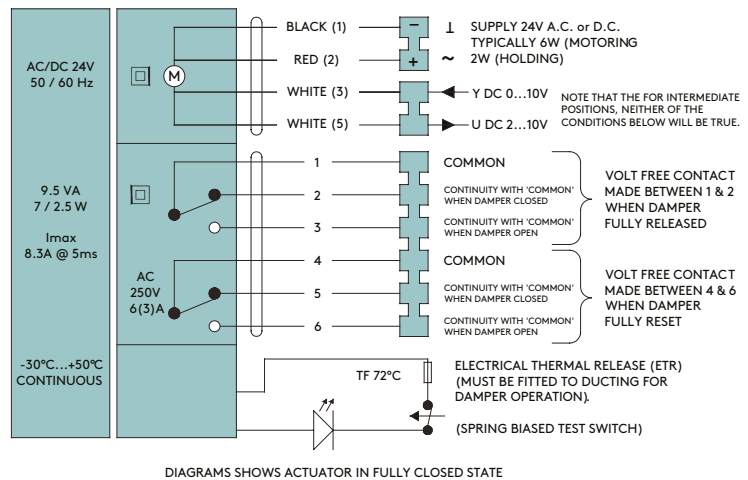
## Mode 6 PTC 230V

Supply On – Damper motors open.  
 Supply Off – Damper spring closes.  
 Electrical Thermal Release.  
 External mechanical position indicator with pointer.  
 Close Time ≈ 22 secs.  
 Open Time ≈ 60 secs.  
 (To isolate from main power supply, the system must incorporate a device which disconnects the phase conductors, with at least 3mm contact gap.)



## Mode 5-3P PTC 24V

Supply On – Damper motors open.  
 Supply Off – Damper spring closes.  
 The M5-3P is controlled by standard 0...10V control signal. The actuator motors to the position specified by the control signal. If the ETR is activated, power supply lost or removed the device springs the damper to the fail-safe position.  
 Electrical thermal release (ETR)  
 (Must be fitted to ducting for damper operation).  
 Spring close time ≈ 18 seconds  
 Motor open time ≈ 120 seconds  
 (Connect 24V via a safety isolating transformer.)  
 IP54 Rated.



DIAGRAMS SHOWS ACTUATOR IN FULLY CLOSED STATE

# SPAN Damper Dimensional Data

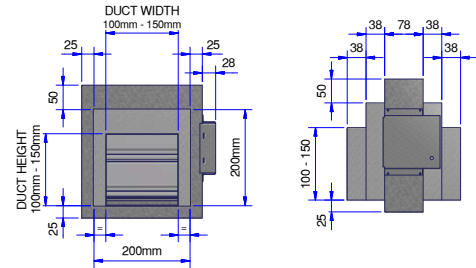
## SmokeShield PTC

### Base Dampers

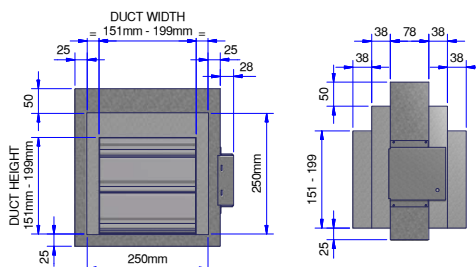
#### Rectangular Dampers Series 501

For Rectangular Dampers spigots are 5mm under duct size. Widths and heights available in 1mm increments.

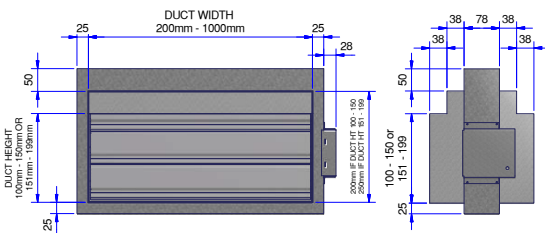
FOR DUCT WIDTHS AND HEIGHTS OF 100-150MM



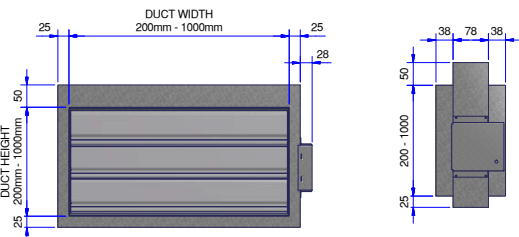
FOR DUCT WIDTHS AND HEIGHTS OF 151-199MM



FOR DUCT WIDTHS 200MM - 1000MM WITH HEIGHTS OF 100-199MM



FOR DUCT WITH WIDTHS AND HEIGHTS OF 200 - 1000MM



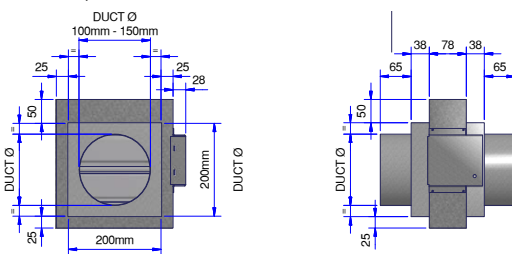
### Base Dampers

#### Circular Dampers Series 601

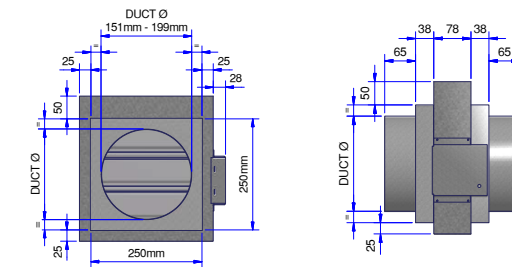
For Circular and Flat Oval Dampers spigots are 3mm under duct size. Diameters and flat oval diameters in 1mm increments.

Circular Dampers Series 601

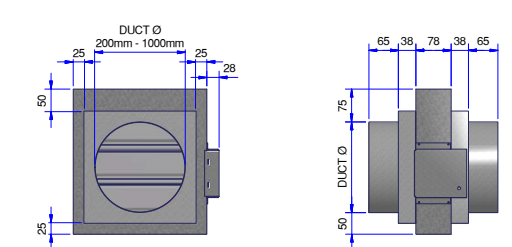
FOR DAMPERS 100-150MM



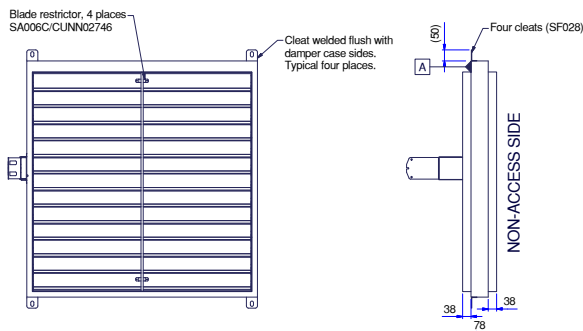
FOR CIRCULAR DAMPERS SERIES 601, DIAMETERS 151-199MM



FOR CIRCULAR DAMPERS SERIES 601, DIAMETERS 200-1000MM



## Cleat Dimensions





# Troubleshooting

Product Commissioning & Maintenance Available

Below is a quick guide to problems that may be encountered.

Please note modifications made to units will invalidate warranties etc

Fault	Possible problem	Recommended action
Interface Mode Assembly does not fit into the shroud on the damper.	Damper drive shaft not in line with shroud	Gentle adjustment made by manually setting blades to fully closed
	Mode not in released position	Release clutch on motor using manual key. Check the slot on rear of interface
	Slots on the non-access side of the shroud may be blocked (due to removal of transit plate prior to backfilling)	Ensure adequate clearance
Control mode does not operate electrically	The ETR is not correctly fitted to duct	Screw fix to duct ensuring both parts of the ETR are fully together. Do not over tighten
	The mode is incorrectly wired	Check wiring in accordance with procedures
	The ETR cables have been damaged or tampered with	Replace with new mode
Control Mode operates, but limited, or no movement of damper blades is observed	The mode is not correctly synchronised with the interface	Remove motor from interface. Check motor in fully released state. Set position of interface, and refit motor with label upmost, include motor location pointer and washer
	The damper is damaged or poorly installed	New damper or re-install
	Interface not fitted correctly to damper	Fit interface correctly, ensure retaining pin protrudes through location hole in the shroud
	Foreign matter is impeding blade movement	Check and remove
	Motor location pointer omitted	Fit new pointer
	Mode not screwed down correctly	Check and tighten

# Inspection and handover check sheet

This certificate applies only to Swegon Fire Dampers. The installer must complete this installation certificate when installing fire and smoke dampers. A separate certificate must be completed for each individual fire and smoke damper.

	Question	Action	
1	Are the dampers the correct type?	Confirm damper is correct type for the application	
2	Are the dampers located correctly?	The damper location is to be checked against the installation drawings/details	
3	Are the dampers correctly identified?	Unique system ID to be clearly indicated on the damper or other agreed location.	
4	Have supports for both the damper and the adjacent ductwork been installed in accordance with the approved manner?		
5	Are the dampers fitted in the correct orientation?	Confirm the damper is installed with any actuators (if applicable) on the left or right hand side. Not on the top or the bottom (i.e. blade pivot running vertically) unless permitted under the respective DoP.	
6	Is access through the ductwork, to the damper unobstructed?	Unobstructed space should be provided for safe access to the damper. This must include access through ceiling voids and adjacent services. Damper installer to advise the system designer if problems are foreseen.	
7	Has the space around the damper and within the opening been left clear and not been used for other services?	Other services within the installation opening will invalidate the installation method. Damper installer to advise the lead contractor if problems are foreseen.	
8	Using the access opening provided, check that blades open and close.	Check position of damper blades.	
9	Has the damper been checked for internal cleanliness, free from damage and that vertical casings in particular are free from debris?	With the damper in the closed position, inspect for damage.	
10	Has the damper been released to simulate operation of the thermal release? (Damper drop test)	Ensure damper operation is free from interference.	
11	Have the damper blades been re-set following drop test and the access panel replaced?	After re-setting the damper, check the position shown on the blade position indicator is correct.	
12	At the time of damper handover, is the fire barrier and penetration seal complete?	Damper installer to record on the handover register if any following trades are still to complete their activities.	
13	Is the damper installation complete and available for handover prior to system commissioning?	Obtain the relevant acceptance of the damper installation from the CDM coordinator.	
14	Is the completed handover register cross-referenced back to the identification codes listed in the system designers damper schedule?		

Damper Unique System I.D: .....

Name of installation location:.....

Address:.....

Installation location identification section/floor/room: .....

Damper product type: .....

Release fuse temperature: .....

Notes/Considerations: .....

Installed by: .....

Company Name: .....

Address: .....

Company Telephone No: .....

Installers Name: .....

Installers Telephone No: .....

Date of installation: .....

It is hereby verified that the damper detailed above has been installed and tested according to the manufacturers recommendations:

Installers signature: ..... Date: .....

## Notes

[illegible]