INSTALLATION GUIDE

DWFX-F Installation Method Multiple Assembly

Contents

Drawings

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

Applies to...

- Actionair SmokeShield PTC V2

Health and safety

- This process must be undertaken by competent persons. More than one person will 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 handing 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.

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by Swegon

CE Installation Method Overview

Application	Installation Method	
	Actionair SmokeShield	Actionair FireShield
Vertical Damper Installation in Standard Flexible Supporting Construction (Plasterboard Wall)	Page 3, [AA/F13409]	Not applicable
Vertical Damper Installation in Rigid Supporting Construction (Masonry/Rigid Wall)	Page 3, [AA/F13410]	Not applicable

- Connecting ductwork omitted for clarity. Ductwork must be independently supported. There must be an appropriate break-away joint between the damper and connecting ductwork on both sides of assembly. Aluminium rivets or plastic cleats, clips, clamps and bolts etc. should be used for this, unless fire resisting duct- work is being used where fire resisting fixings should be used. A minimum of 200 mm between fire dampers installed in separate ducts and 75 mm between fire damper and a construction element (wall/ floor)
- The methods in this manual should be followed to ensure a CE-marked installation. Any deviation from the installation being described in this document will result in a non-compliant installation. Depending on the installation method it may not be possible to make a non-compliant installation compliant without significant cost, so it is advisable to check before commencing work.
- These instructions are applicable to the Actionair SmokeShield V2 damper.
- The SmokeShield dampers are designed to be used with fire separating elements to maintain fire compartments. The dampers are motorised and meet the requirement for Integrity and Smoke Leakage classification.
- The dampers are CE marked against the harmonised product standard, BS EN 15650. They are classified against BS EN 13501-3, test against BS EN 1366-2 and where applicable the extended field of application is BS EN 15882-2.
- Please check the site wall constructions meet the tested installation methods. Installing a damper in a standard supporting construction that has not been tested or into a specific supporting construction that has not been tested will result in a non-compliant installation. Please see the latest Declaration of Performance for more details.
- A CE compliant installation method is not a guarantee of meeting building regulations. The Authority Having Jurisdiction (AHJ) needs to confirm that the installation method meets the requirements of building regulations.
- Please check that the wall is able to withstand any load that maybe transferred onto it.
- Please see the installation drawing and hole sizer program to get the correct hole size for the installation.

Vertical Damper Installation in Standard Flexible Supporting Construction (Plasterboard Wall)

Actionair SmokeShield V2 - [AA/F13409]

Please see Figure Drawings on next page

Installation Method

1. Place the two top dampers (dampers with hanging cleats) together with the actuators to the outside, ensuring the inside edge side plates line up (Fig 1).
2. Rivet the dampers together through the pre punched holes on the side plates with the provided 4mm rivets on both sides, ensuring that the rivet head is on the slot side (Fig 2).
3. Repeat the process for the bottom two dampers.
4. Lay the dampers down and position them so that the remaining plates line up (Fig 3).
5. Rivet the dampers together on the available face
6. Rotate the dampers over so that you flip them from the side to provide support to the damper ensure that the flange doesn't get damaged in this process, do not use the hanging cleats for this (Fig 4).
7. Rivet the remaining plates together, all holes should now have a rivet in, on both sides of the damper (Fig 5).
8. Measure the overall damper casing size w x h, include the PTC Shroud (28mm) in the width but do not include any of the peripheral flange.
9. Calculate the hole to cut size by adding two board thicknesses to the finished hole width and height.
10. Mark out the hole on the partition and cut it out, cut- ting the top and bottom edges first to maintain stability.
11. Frame out the hole with stud and track and cover this with board. Finish edges with joint filler (Fig 6).
12. Drill clearance holes in the damper flange at 150mm centres and such that they will allow screws to pull into the stud and track around the hole.
13. Install the damper and fix to the wall through the flange as shown in the drawing. Drop rods are to only have a nut and washer on the underside of the cleat, and must not be position such that they are applying a forces that will cause the damper to be levered away from the wall.

Vertical Damper Installation in Standard Rigid Supporting Construction (Masonry Blocks)

Actionair SmokeShield PTC - [AA/F13410]

Please see Figure Drawings on next page

Installation Method

1. Place the two top dampers (dampers with hanging cleats) together with the actuators to the outside, ensuring the inside edge side plates line up (Fig 1).
2. Rivet the dampers together through the pre punched holes on the side plates with the provided 4mm rivets on both sides, ensuring that the rivet head is on the slot side (Fig 2).
3. Repeat the process for the bottom two dampers.
4. Lay the dampers down and position them so that the remaining plates line up (Fig 3).
5. Rivet the dampers together on the available face
6. Rotate the dampers over so that you flip them from the side to provide support to the damper ensure that the flange doesn't get damaged in this process, do not use the hanging cleats for this (Fig 4).
7. Rivet the remaining plates together, all holes should now have a rivet in, on both sides of the damper (Fig 5).
8. Measure the overall damper casing size w x h, include the PTC Shroud (28mm) in the width but do not include any of the peripheral flange.
9. Using the holes sizer program check the opening in the wall matches the size of the damper
10. Drill clearance holes in the damper flange at 150mm centres and such that they will allow screws to pull into the stud and track around the hole.
11. Install the damper and fix to the wall through the flange as shown in the drawing. Drop rods are to only have a nut and washer on the underside of the cleat, and must not be position such that they are applying a forces that will cause the damper to be levered away from the wall.

Figure images

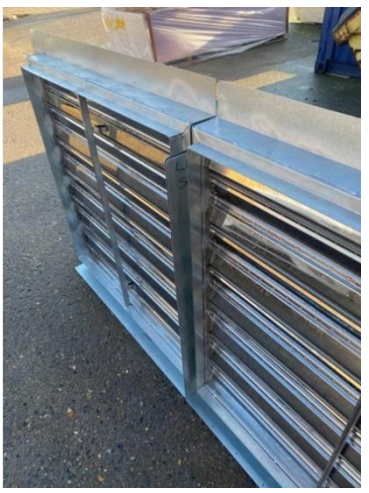


Fig 1

Fig 2

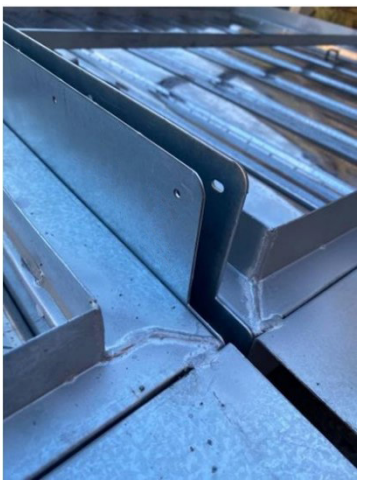


Fig 3

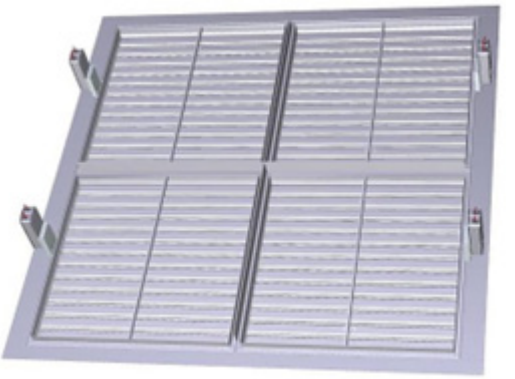


Fig 4

Fig 5

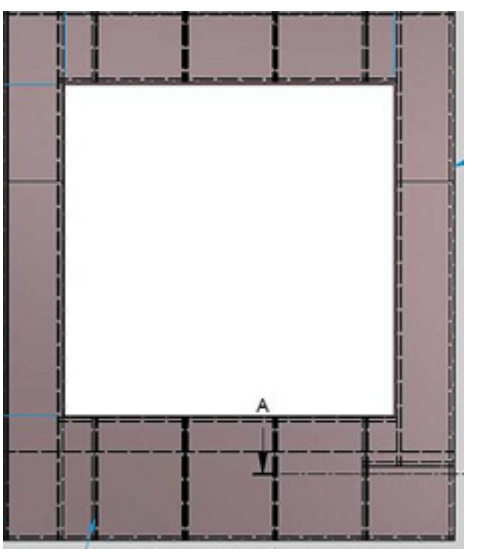


Fig 6

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:

- Remove and retain screw (8mm A/F) and washer, through the position indicator on the control mode.
- Remove the control mode and interface adapter plate.
- Taking care not to disturb the drive hexagon. Replace the interface adapter plate and control mode in the new orientation.
- Replace the washer and screw tight (Max 5Nm)

5. Select a suitable position for the Electrical Thermal Release (ETR) to be mounted through the ductwork.

THIS ETR MUST be installed at least 200mm higher than the centreline of its respective actuator.

6. Apply the self-adhesive template (located on the rear of the ETR) and drill the necessary holes (2xØ3mm & 1x 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.
7. 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.
8. 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.
9. 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.
10. 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

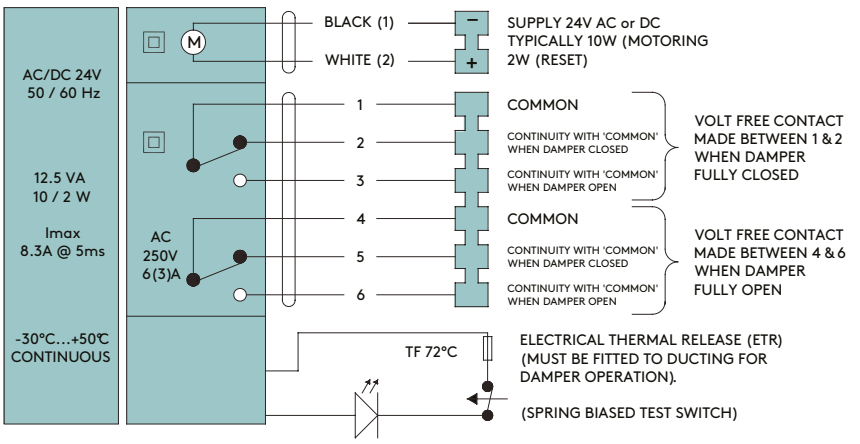
BS 9999:2017 - Code of Practice for the Fire Safety in the Design, Management and Use of Buildings - Annex W

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 prepared 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.

DWFX-F Wiring Diagrams

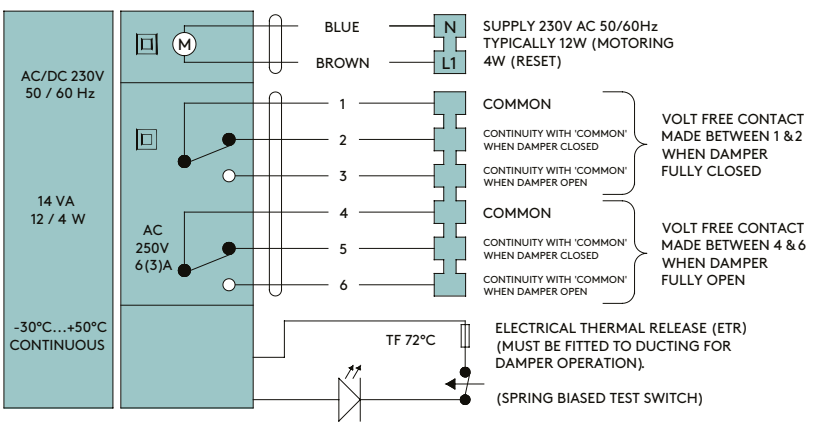
Mode 5 PTC 24V

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.



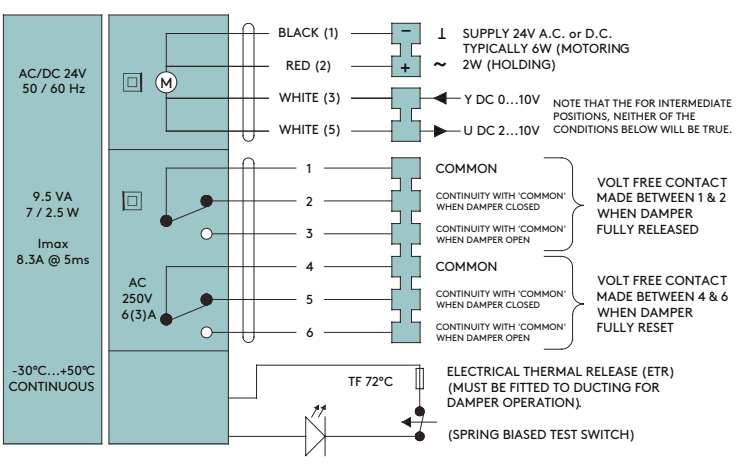
Mode 6 PTC 230V

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

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

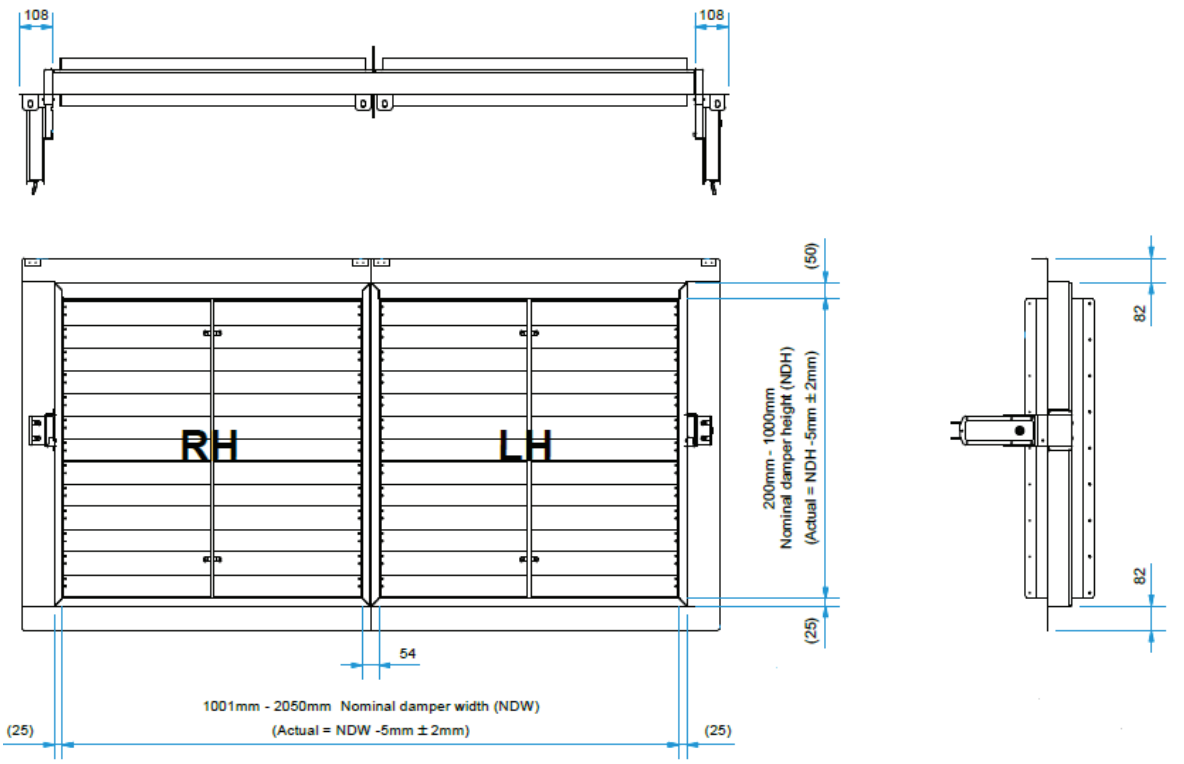
Dimensional Data

Rectangular Dampers Series 501

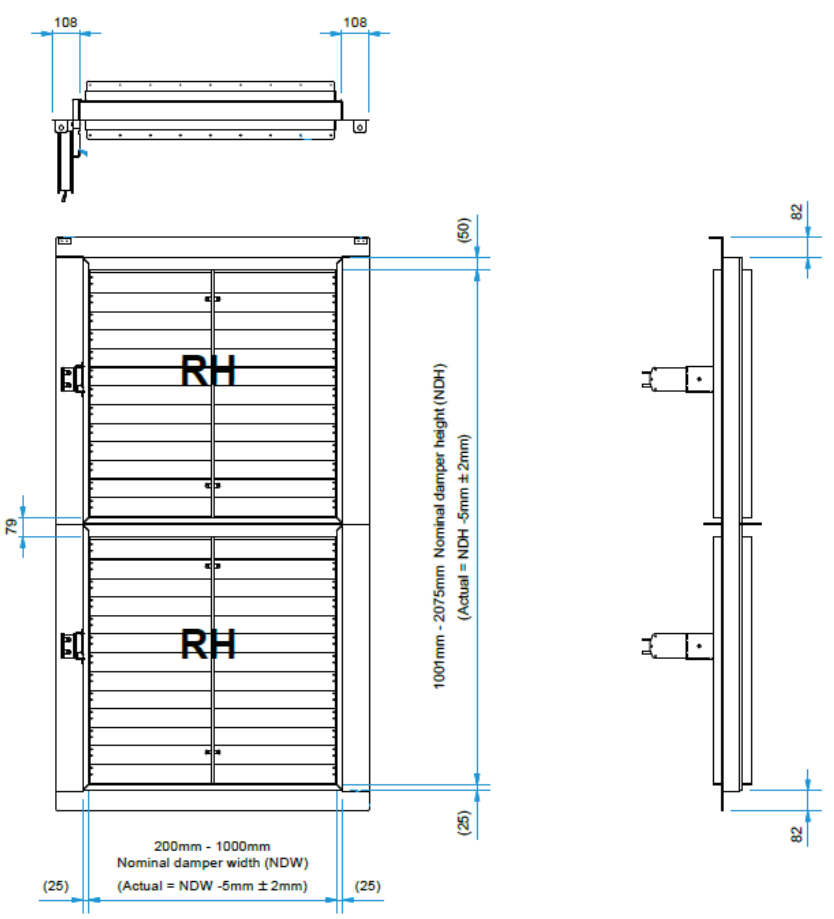
For Rectangular Dampers spigots are 5mm under duct size.

Widths and heights available in 1mm increments.

2 x 1 Section Multiple Assembly



1 x 2 Section Multiple Assembly



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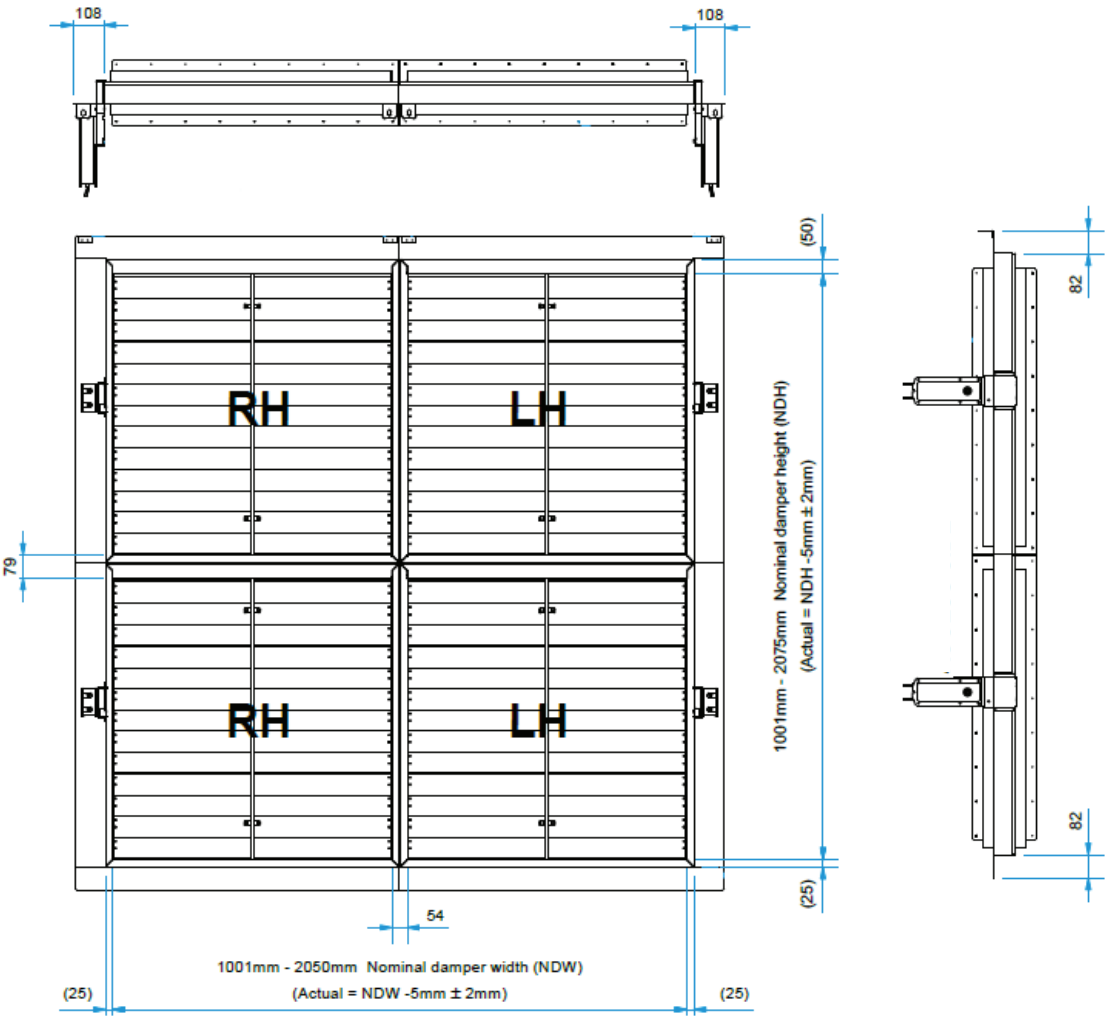
2 x 2 Section Multiple Assembly



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 manufactures recommendations:

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