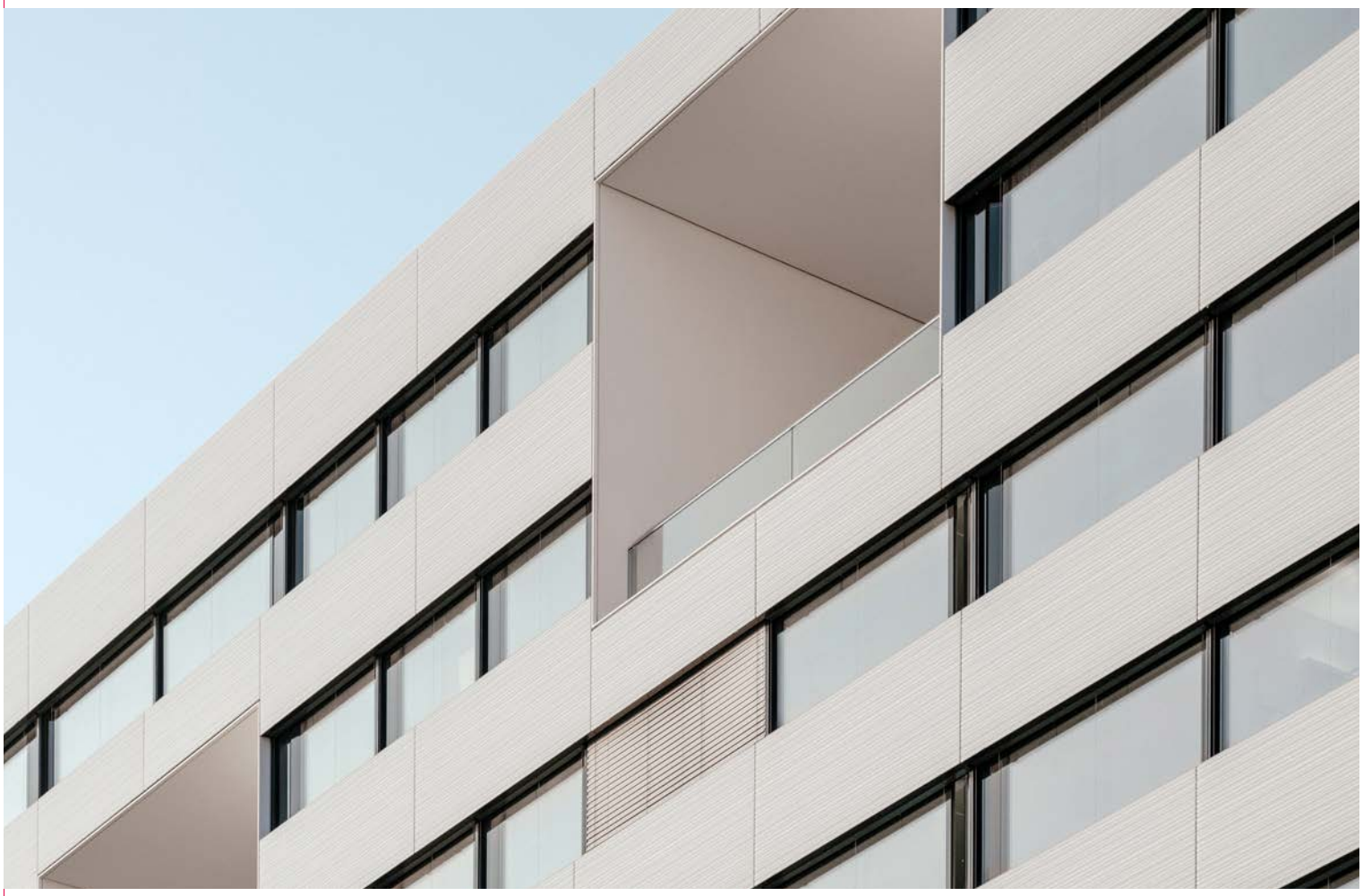
Catalogue

actionair SmokeShield PTC™



CE Marked 'ES' Rated Fire/Smoke Dampers

Used to prevent spread of fire and smoke maintaining compartmentation

www.actionair.co.uk
sales@actionair.co.uk

Swegon Air Management

SmokeShield PTC™

Features

- CE marked fulfilling the requirements of EN 15650
- Approved by LPCB and conforms to LPS1162 issue 4
- Fire tested to EN 1366-2
- Classified to EN 13501-3
- Proportional Torque Control (PTC) for optimised torque performance
- Unique *snap*lock™ drive interface ensures user friendly connection of Control Mode
- Easy connection to square, rectangular, circular and flat oval ductwork
- Choice of tested Installation Methods to suit Concrete/ Masonry Floors/Walls and Dry Walls
- Choice of electrical Control Modes
- Unique and patented Electrical Thermal Release for ultimate safety
- ASFP Grey Book listed
- Red Book Live Listed
- Halogen Free low smoke and fume cabling supplied as standard
- Actionpac damper control system compatibility

Specification

SmokeShield PTC™ Proportional Torque Control, CE Marked 'ES' Rated Fire/Smoke Dampers. Opposed bladed with 75mm x 0.5mm thick stainless steel aerodynamic interlocking blades incorporating synthetic seal, with steel blade end bearings and peripheral gasketting. Housed in a galvanised steel fully welded 1.2mm spigotted casing suitable for square, rectangular, circular or flat oval connections.

The totally enclosed precise movement opposed blade drive shall be positioned out of airstream for protection against damage, be hard wearing and free running.

The Control Mode/Damper connection shall be by means of the *snap*lock™ drive interface mechanism, which is totally independent of the ductwork

SmokeShield PTC™ 'ES' Rated Fire Dampers with their appropriate control modes shall have spring Fail-Safe Closed operation only, with selected Control Mode (M5 24V, M6 230V, M5 - 3P 24V) as supplied by Actionair.

Also available with Schischek atex rated actuators.

CE Marking

Following the introduction of the new Construction Products Regulation (CPR) on the 1st July 2013, Actionair, a brand of Swegon Air Management Limited, offer a comprehensive range of CE marked fire dampers together with approved installation methods.

Under the CPR, manufacturers of construction products which are covered by harmonised European standards (hENs) are required to affix the CE mark and make a Declaration of Performance (DoP) for their products.

CE marked fire dampers must fully comply with the product standards: EN 15650:2010 Ventilation for Buildings - Fire Dampers and compliance is verified through assessment by a "Notified Body".

The full and intensive assessment process includes;

- Fire testing to the latest European standards - EN 1366-2
- Classified to EN 13501-3
- Corrosion testing to EN 60068-2-52
- Thermal fuse testing to ISO 10294-4
- Factory production control which includes a continuous program of cyclic and leakage testing of production dampers to ensure full compliance of every product

Companies must also be ISO 9001:2008 accredited and every product must be CE marked with all known characteristics. It must be supplied with comprehensive installation, operation and maintenance instructions.

Greater legal responsibility for ensuring compliance with the harmonised standards will also be imposed on importers, distributors, specifiers and builders.

Fire Damper Fire Resistance Test

EN 1366-2 (Test standard) gives requirements for testing dampers to the standard time/ temperature curve with a requirement to close within two minutes of the start of the test with a constant air flow of 1.5m/second. After closure a 300Pa pressure differential is applied to the damper and the damper leakage (corrected to 20°C) is recorded throughout the rest of the test. The largest size of damper to be offered for sale must be fire tested. Pass and fail criteria is included in the standard.

E (Integrity) - the damper must leak no more than $360m^3/hr/m^2$ at any point during the test.

ES (Integrity and Leakage) - the damper must leak no more than $200m^3/hr/m^2$ at any point during the fire test. This also applies to the largest and smallest size of damper to be offered for sale at ambient temperature for the ES criteria to be applicable.

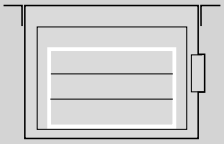
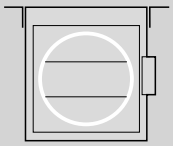
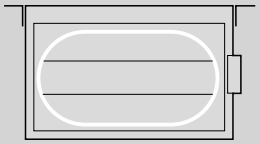
Application Parameters

SmokeShield PTC™ 'ES' Rated Fire/Smoke Dampers to maximum width and height dimensions can be used where the operating total system pressure is up to 1500 Pascals and duct velocities to 15m/second. The SmokeShield PTC™ Damper blades are open and fail-safe to the closed position. Dampers may be installed both vertically and horizontally. Airflow can be from either direction.

Actionair SmokeShield PTC™ Dampers are designed for applications in normal dry filtered air systems. If exposed to fresh air intakes and/or inclement conditions, the dampers should be subject to a planned inspection programme.

For specialist and/or aggressive applications, please contact us.

Selection Guide

SPIGOT CONNECTIONS	Square / Rectangular	Circular	Flat Oval
			
Series	SS501	SS601	SS701

CONTROL MODES	Mode 5	Mode 6	Mode 5 - 3P
			
24V (Open / Fail-Safe Close)	Page 6		
230V (Open / Fail-Safe Close)		Page 7	
24V (Open / Control / Fail-Safe Close)			Page 8

INSTALLATION METHOD	IF	DWFX-C	DWFC-F	Sleeve & Angle
				
Concrete / Masonry Wall	Page 14 & 15		Page 25	Page 32
Concrete / Masonry Floors	Page 16 & 17			Page 33
Dry Wall fix Cleats (typically fixed prior to encasement by the dry wall partition)		Page 21 & 22		Page 31
Dry Wall fix Flange and Cleats (typically fixed into existing dry wall partition)			Page 26	
Dry Wall		Page 21 & 22	Page 26	Page 31

General

Casing Features

With double skin spigotted galvanised steel (to BS EN 10346:2009) 1.2mm thick casing the SmokeShield PTC™ 'ES' classified Fire/Smoke Dampers comply to Class A and B of Eurovent Document 2/2 and Test Procedures for Classes A, B and C of HVCA Ductwork Specification DW144.

Spigot Connections

Damper casings are manufactured with welded spigotted connections suitable for Square / Rectangular SS501, Circular SS601 and Flat Oval SS701 duct connections.

Installation Methods

SmokeShield has four approved installation methods

SmokeShield PTC™ I/F Installation Frame

CE Marked 'ES' Rated Fire/Smoke Dampers complete with HEVAC / HVCA Installation Frame.

Typically installed into concrete / masonry walls and floors.

SmokeShield PTC™ DWFX-C Dry Wall Fix Cleats

CE Marked 'ES' Rated Fire/Smoke Dampers complete with Dry Wall Fix Cleats.

Typically installed prior to encasement by the dry wall partition.

SmokeShield PTC™ DWFX-F Dry Wall Fix Flange and Cleats

CE Marked 'ES' Rated Fire/Smoke Dampers complete with Dry Wall Fix Flange and Cleats

Installed into existing dry wall and masonry walls.

SmokeShield PTC™ S&A Sleeve & Angle

CE Marked 'ES' Rated Fire/Smoke Dampers c/w Sleeve & Angle Installation Frame.

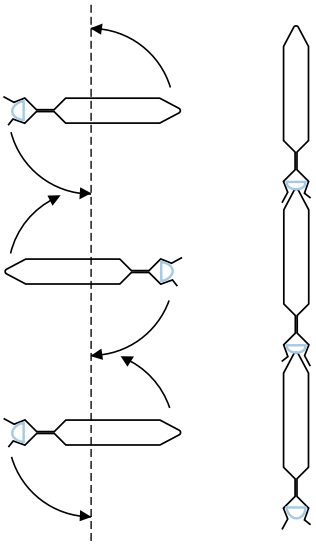
Typically installed into concrete / masonry walls, floors and dry walls with use of Ablative Batt.

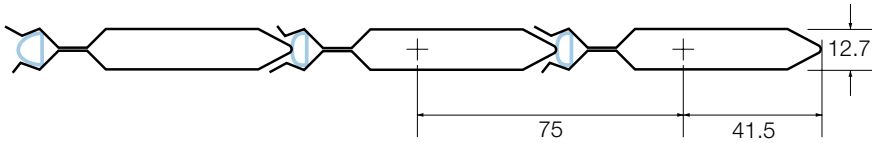
Blade Features

SmokeShield PTC™damper blades are aerodynamic double skin, Type 1.4016 (430) Ferritic stainless steel, which are 75mm x 0.5mm thick and interlock to form a positive smoke and fire resisting shield.

•Incorporated within the blade profile is a synthetic seal to ensure low closed blade smoke leakage.

Stainless steel blade end bearing and peripheral gasketting maintain the low closed blade smoke leakage whilst allowing for expansion under full fire conditions.





Damper Control Modes

Control Mode Options

A choice of three Motorised Control Modes are available:

- Control Mode 5 (M5 PTC) 24V (Open / Fail-Safe Close)

- Control Mode 6 (M6 PTC) 230V (Open / Fail-Safe Close)

- Control Mode 5 - 3P (M5 - 3P PTC) 24V (Open / Control / Fail-Safe Close)

The Control Modes are located outside of the ductwork for easy installation and access.

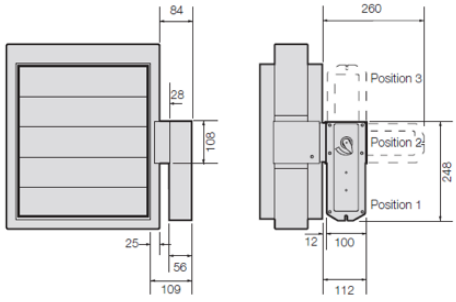
Control Modes 5, 6 and 5 - 3P Electrical Optimised motor/spring return control modes with remote reset-release facilities, and with volt free contacts for provision of external indication, monitoring and control by means of an Actionpac damper control system, or by a suitable alternative proprietary control format.

Three Position Configuration

Control Modes 5, 6 and 5 - 3P can be fitted in 3 positions through 180° allowing maximum on-site installation flexibility.

- Vertically down (Position 1)
- Horizontally (Position 2 - standard)
- Vertically up (Position 3)

This can be simply and easily carried out on site,by repositioning the Location Plate and Control Mode on to the snaplock™ Drive Interface. This flexibility ensures that the damper and control mode require the minimal amount of room



All SmokeShield Control Modes must be in the released position prior to connection.

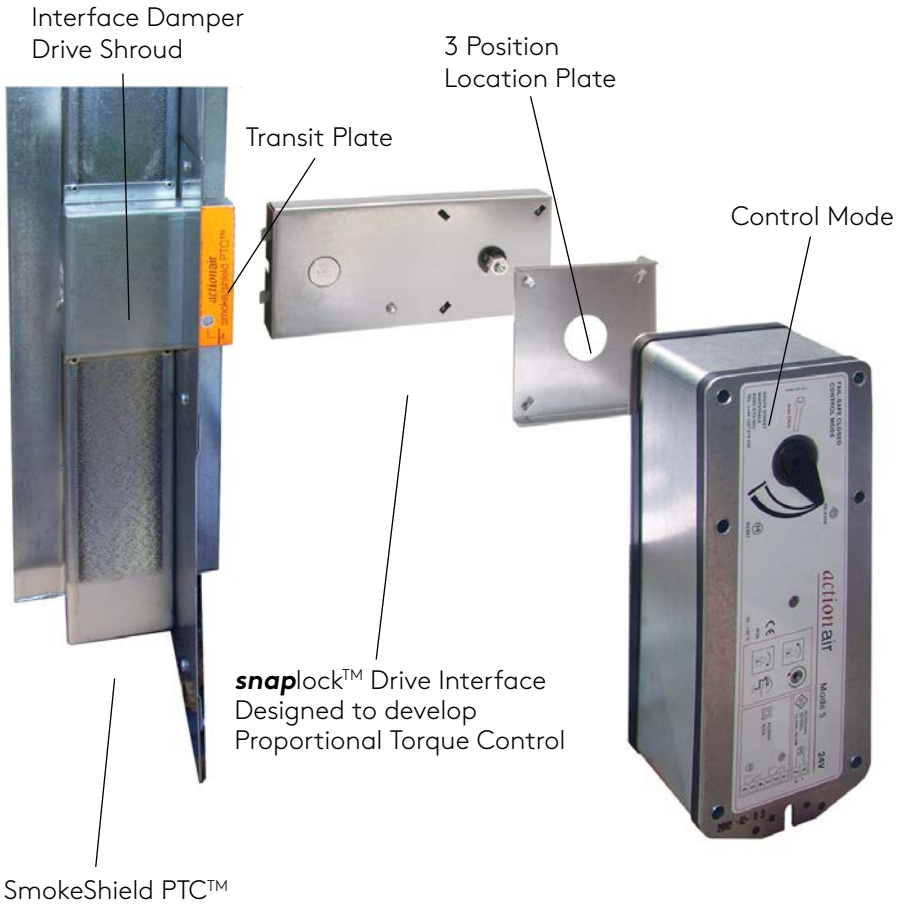
Damper / Control Mode Interface

The Control Mode operates the SmokeShield through a unique drive system. The *snap*lock™ Damper/ Control Mode Interface.

Automatic 'ES' classified Fire/Smoke Damper and Control Mode assembly with a unique and dedicated Proportional Torque Control for optimised Damper/Control Mode torque performance. The unique *snap*lock™ drive interface ensures user friendly, easy and secure connection of the Control Mode to the damper.

The drive interface which is totally independent of the ductwork, eliminates the need for costly dedicated duct sections, and provides ease of connection to square, rectangular, circular and flat oval ductwork.

This drive interface guarantees that only the correct and certified Actionair products can be used.



Electrical Thermal Release (ETR)

Dampers are fail-safe by means of a unique and patented electrical thermal release which operates at approx 72 °C or if power supply is interrupted, tested to ISO10294-4 and complying with BS 9999 : 2008 (Ref 33.4.5.3).

The ETR incorporates triple safety features, including an ingenious device that ensures the fail-safe status of the damper if the ETR is not fitted on to the ductwork.

A manual test switch allows periodic operation of the damper for testing purposes simulating actual fail-safe release under smoke/fire conditions.

For safety reasons the ETR is designed to operate once only when the activation temperature is reached.

ETR Indication light

As standard, a green LED lamp is built into the ETR housing. This gives the user a simple and clear visual check that the actuator is receiving power, when the ETR is correctly fitted, and the thermal fuse is intact.

Control Mode Details

Control Mode 5 PTC

Control Mode 5 PTC 60 seconds MAX Open/22 seconds Close Operation

This control mode achieve 60 seconds to drive to the end position, with a 22 second spring return time. As with all PTC modes, this series uses the snaplock™ interface. Fire rated dampers are primarily designed to be fitted into a wall or floor, and the interface displaces the mode from the line of the wall. Dampers may be installed and finally the mode removed from storage for easy fitting, thus preventing damage to the mode before it is required. End switches and LSF cable are provided as standard on these modes. Fail safe close only in accordance with the fire damper standards.

The Electro Thermal Release (ETR) supplied for fire damper use has an integral fail-safe device to ensure that it is installed into the ductwork correctly. End switches are provided with each mode, so that damper Reset and Release positions may be monitored. The mode is permanently attached to the mechanism driving the damper blades.

Specification

M5 PTC	10/2W (12.5VAMAX) 24V end switches SPDT 250V 6(3)A	SmokeShield	Thermal Release/Power Off - Fail Safe Close

SmokeShield Control Mode M5 PTC is supplied as standard in accordance with all relevant EN regulations for fire dampers, with the Electrical Thermal Release (ETR) The units fail-safe by means of the unique and patented ETR device which operates at 72°C, or if the power supply is off/interrupted. Complying with BS 9999 : 2008 (Ref 33.4.5.3).

Control Mode 5 PTC Application and Wiring (with ETR)

SmokeShield
Mode 5 PTC (24V System)

Supply On – Damper motors open.

Supply Off – Damper spring closes.

Electrical Thermal Release.

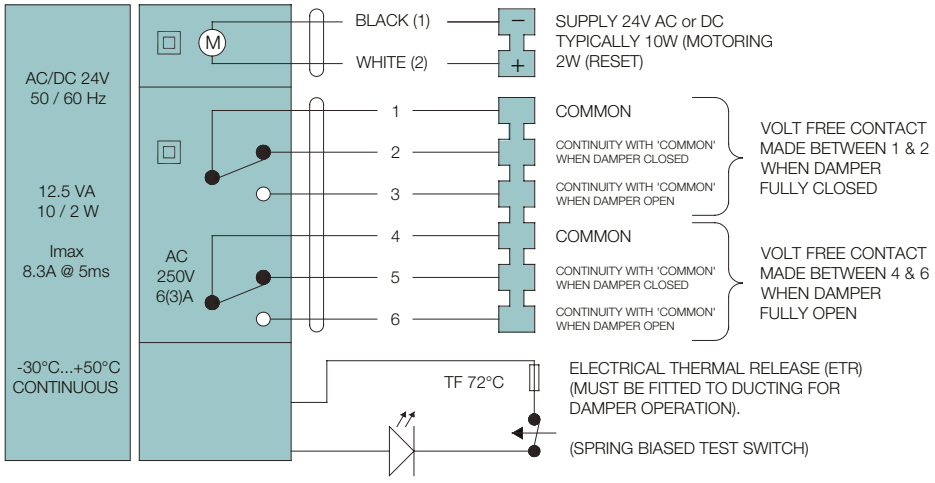
External mechanical position indicator with pointer.

Close Time ≈ 22 secs.

Open Time ≈ 60 secs.

(Connect 24V via a safety isolating transformer.)

IP54 Rated.



General (Electrical)

One metre of halogen free low smoke and fume electric cable is also included with Control Mode 5 for convenience of on site wiring. This also provides the distinct safety advantage of all electrics terminating outside the duct, eliminating potential in-duct fire hazards from wiring faults. (Connection boxes available.)

The Electrical Thermal Release is prewired with 0.5m halogen freelow smoke and fume cable on Control Mode 5.

A manual test switch fitted on the ETR allows periodic operation of damper simulating actual fail-safe release under smoke/fire conditions.

Control Mode Details Continued

Control Mode 6 PTC

Control Mode 6 PTC 60 seconds MAX Open/22 seconds Close Operation.

This control mode achieve 60 seconds to drive to the end position, with a 22 second spring return time. As with all PTC modes, this series uses the *snap*lock™ interface. Fire rated dampers are primarily designed to be fitted into a wall or floor, and the interface displaces the mode from the line of the wall. Dampers may be installed and finally the mode removed from storage for easy fitting, thus preventing damage to the mode before it is required. End switches and LSF cable are provided as standard on these modes. Fail safe close only in accordance with the fire damper standards.

The Electro Thermal Release (ETR) supplied for fire damper use has an integral fail-safe device to ensure that it is installed into the ductwork correctly. End switches are provided with each mode, so that damper Reset and Release positions may be monitored. The mode is permanently attached to the mechanism driving the damper blades.

Specification

M6 PTC	12/4W (14VAMAX) 230V end switches SPDT 250V 6(3)A	SmokeShield	Thermal Release/Power Off - Fail Safe Close

SmokeShield Control Mode M5 PTC is supplied as standard in accordance with all relevant EN regulations for fire dampers, with the Electrical Thermal Release (ETR) The units Fail-safe by means of the unique and patented ETR device which operates at 72°C, or if the power supply is off/interrupted. Complying with BS 9999 : 2008 (Ref 33.4.5.3).

Control Mode 6 PTC Application and Wiring (with ETR)

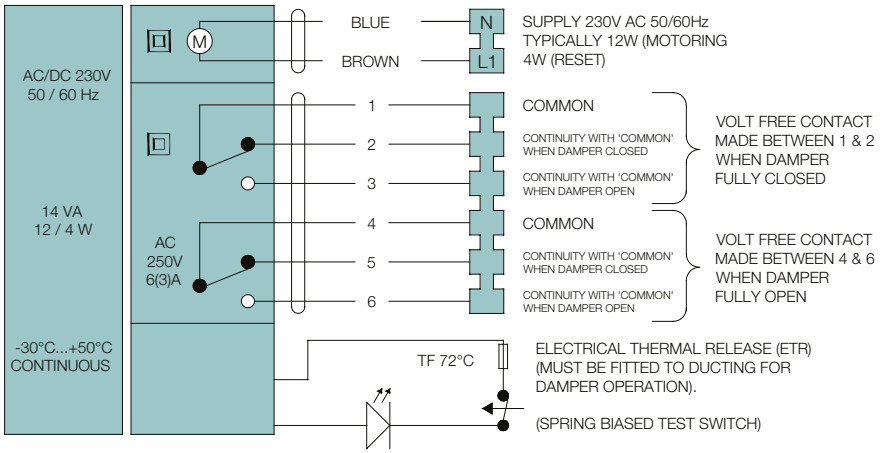
SmokeShield
Mode 6 PTC (230V System)

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 a least 3mm contact gap.)

Note: 120V A.C. version also available.

IP54 Rated.



General (Electrical)

One metre of halogen free low smoke and fume electric cable is also included with Control Mode 6 for convenience of on site wiring. This also provides the distinct safety advantage of all electrics terminating outside the duct, eliminating potential in-duct fire hazards from wiring faults. (Connection boxes available.)

The Electrical Thermal Release is prewired with 0.5m halogen freelow smoke and fume cable on Control Mode 6.A Manual test switch fitted on the ETR allows periodic operation of damper simulating actual fail-safe release under smoke/fire conditions.

Control Mode Details Continued

Control Mode 5-3P PTC

Control Mode 5 – 3P PTC with additional facility for a third (Control) Position. 120 seconds Open, 18 seconds Close. This 3 position control mode allows a damper to be moved to both the reset and release position, with the additional facility to move the damper to a third control position. The mode is given a 0-10V DC signal, defining the control position of the blades. A return signal 0 -10V DC is provided to allow monitoring of position. To support this actuator and allow positioning to be set local to the damper, Actionair have the Control Monitoring Stations: M5-3P (24V) & M5- 3P (230V). As with all PTC modes, this series uses the *snap*lock™ interface. Fire rated dampers are primarily designed to be fitted into a wall or floor, and the interface displaces the mode from the line of the wall. Dampers may be installed and then the mode removed from storage for easy fitting, thus preventing damage to the mode before it is required. End switches, LSF cable, and Electro Thermal Release (ETR) are provided as standard.

Specification

M5-3P PTC	24V 7/2W (10VA) end switches SPDT 250V 6(3)A	SmokeShield	Thermal Release/Power Off - Fail Safe Close 0-10 V set position

SmokeShield Control Mode M5-3P PTC is supplied as standard in accordance with all relevant EN regulations for fire dampers, with the Electrical Thermal Release (ETR) The units Fail-safe by means of the unique and patented ETR device which operates at 72°C, or if the power supply is off/interrupted. Complying with BS 9999 : 2008 (Ref 33.4.5.3).

SmokeShield Mode 5-3P PTC (24V System)

Supply On – Damper motors open.
Supply Off – Damper spring closes.

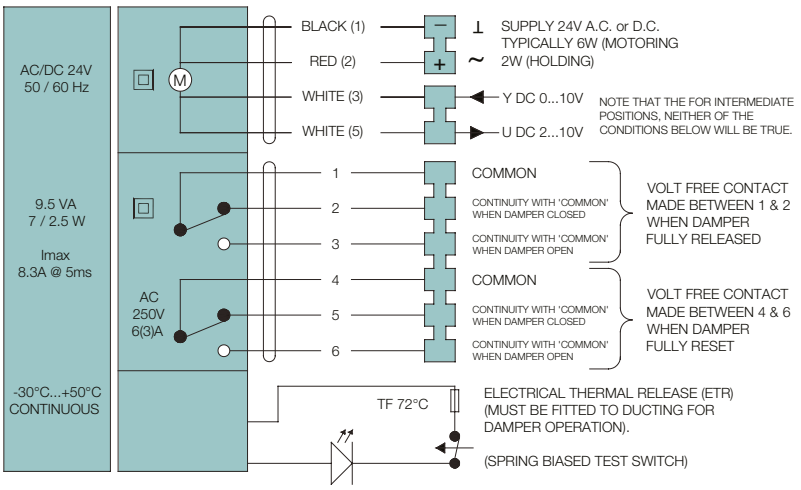
The M5-3P-1 is controlled by standard 0...10V control signal. The actuator motors to the position specified by the control signal. If the ETR is activated, power supply lost or removed the device springs the damper to the fail-safe position.

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

Control Monitoring

M5 - 3P - CMS (230V)

Control Monitoring Station: M5-3P (24V) & M5-3P (230V). Stand alone applications.

The M5-3P CMS this control unit gives the user the opportunity to set a control position. It provides visual (lamp) and volt free (relay) indication of damper position (Released, at Control Position, Reset). A terminal is provided to allow feedback of the 0 -10V DC monitoring voltage. In addition, a fire alarm input may be made (NC) which will cause the damper to release if the contact is broken.

3PSFDI

Three Position Smoke Fire Damper Interface (3PSFDI) Used with the Actionpac LNS System Actuator can be set to a balanced position or driven one way and fail safe via spring return, alternatively be modulated via 2 – 10V signal from BMS.

Damper Installation and Control Mode Fitting

Step 1

Install the SmokeShield PTC™ Automatic Smoke and Fire Dampers (complete with transit plate) into the structure. Refer to the Actionair Approved Fire and Smoke Dampers Installation Manual.

Care must be taken when back filling to ensure that the *snap*lock™ retaining pin location hole and the entry slot of the damper drive shroud is clear of builders work debris.

Connect and fit duct work to damper spigots. Remove plastic peg and transit plate then discard (recycle).

Step 2

Slide the *snap*lock™ Drive Interface into the damper drive shroud, '*snap*lock™' into position.

The '*snap*lock™' feature provides a user friendly, easy and secure direct connection. It comes pre-set to enable direct fit to SmokeShield damper.

Step 3

Identify location for the Thermal Release. Ideally, this should be fitted to the top half of the duct, adjacent to the control mode. Fit the self adhesive drilling template (supplied) in this position. Drill holes as detailed on the template. Using the two fixing screws provided, secure the Electrical Thermal Release to the duct. Connect electrically, and test operation.

As a safety feature the actuator will only operate if the ETR is correctly fitted to the duct.

Acoustic Data

The data presented is from the Laboratory Determination of Acoustic and Aerodynamic Performance of SmokeShield PTC™ Dampers.

A programme of extensive tests was carried out in the Reverberation Chamber and North Transmission Chamber of Sound Research Laboratories Limited, Holbrook Hall, Sudbury, Suffolk, generally in accordance with BRITISH STANDARDS Nos. 4196, 4773, 4856, 4857 and 4954.

This independent test facility is approved under the NAMAS Scheme.

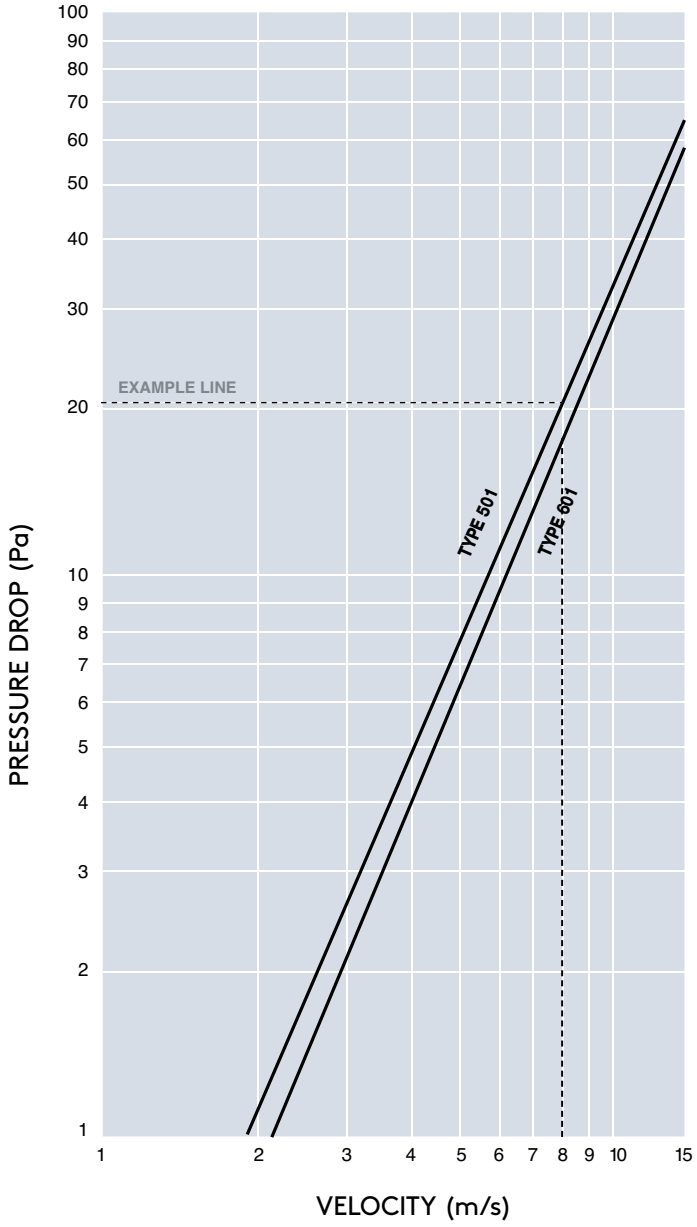
From the selection of a duct velocity within the operational parameters of the damper a resultant pressure drop from Graph 1 can be determined and the sum of these two components applied to the Velocity x Pressure Drop Vs Sound Power Level Graph. (Graph 2)

The graph is the result of a full range of acoustic tests on SmokeShield PTC™ Dampers with the blades set in their fully open position.

The Spectrum Correction Data is applied to the number obtained from the graph and a complete Sound Spectrum of Flow Generated Noise for both Outlet (in duct) and Breakout (casing radiated) can be obtained from Table 1.

Pressure Drop Vs Velocity

Graph 1



Example:

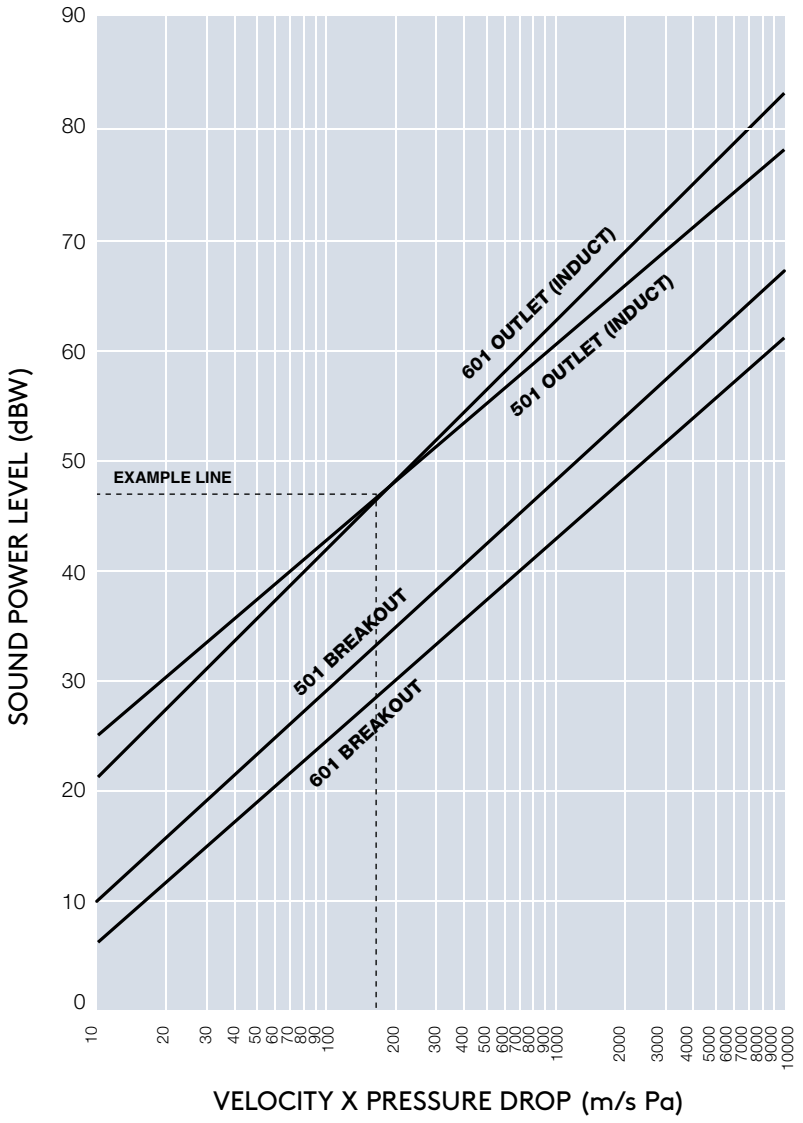
Duct with a design velocity of 8 m/sec. SmokeShield PTC Damper Series 501 fully open.

Pressure Drop = 21 Pa (Graph 1).
Multiply Velocity x Pressure Drop
8 x 21 = 168

From Sound Power Graph (Graph 2) plot 168 on horizontal Velocity/Pressure axis against 501 outlet (induct) graph to obtain 47 dBW on Vertical Sound Power Level Axis. Add or subtract corrections to the 47 dBW to provide full spectrum analysis using appropriate Correction Table.

Velocity (m/s) X Pressure Drop (Pa) Vs Sound Power Level (dBW)

Graph 2

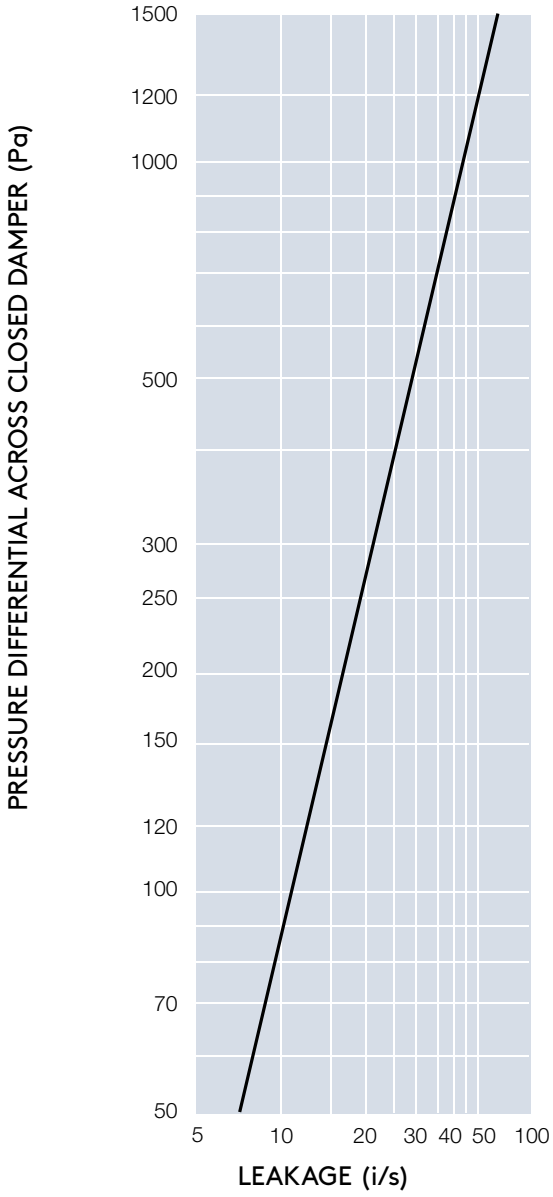


Damper Leakage

Graph 3

SmokeShield PTC™ closed blade leakage as tested on a damper 1000mm wide x 1000mm high.

Leakage data at Ambient temperature (Cold Smoke).



Correction Tables

Table 1

SmokeShield PTC™ Outlet (Induct) Spectrum Corrections

Octave Band	Hz	63	125	250	500	1k	2k	4k	8k
Series 501	dB	5	4	5	5	3	1	-3	-5
Series 601	dB	9	4	4	5	3	1	-3	-6

Table 2

SmokeShield PTC™ Breakout Spectrum Corrections

Octave Band	Hz	63	125	250	500	1k	2k	4k	8k
Series 501	dB	8	11	9	6	-3	-6	-14	-17
Series 601	dB	6	10	8	4	-3	-3	-11	-14

The SmokeShield PTC™ Damper has been tested in accordance with EN 1366- 2. It achieved ES classification in accordance with EN 13501-3. ES classification allows a maximum of 200m³/ Hr/m² (corrected to 20 °C) hot gas leakage throughout the test at 300 Pa pressure differential across the damper.

Accessories

A range of indicator panels, push button switches and damper test units are also available. The housing for these units are manufactured in rigid ABS plastic. The Damper Connection Box is in galvanised steel.

	**Damper Test Unit** Reset (open) and release (closed) indication. Spring bias (power OFF) test switch. Power normally ON.	DTU24	24V AC/DC
		DTU120	120V AC
		DTU230	230V AC
	**Damper Status Indicator** Reset (open) and release (closed) indication.	DSI24	24V AC/DC
		DSI120	120V AC
		DSI230	230V AC
	**Damper Control Unit** Switch ON/OFF function. Reset (open) and release (closed) indication.	DCU24	24V AC/DC
		DCU120	120V AC
		DCU230	230V AC

Damper Release and Indication Module (DRIM)

This is designed for control and monitoring of the electrically operated Smoke Shield PTC™ Fire and Smoke dampers.

It will operate from 24V, 120V or 230V supplies, 50 or 60 Hz.

Selection of the operating voltage is by use of internal links on the PCB, prior to installation and connection of actuator and supply.

The DRIM may be used singly to provide local damper control, or in pairs to provide control from either side of a damper. It can also operate 2 actuators when dampers are provided in 2 multiple sections.

LED position and operation indication is provided.

Operation is by push button to close and twist to re-open damper.

Tested to BS EN 61010 -1: 2001 and is CE compliant. IP44 rated.

Operating range 5 - 40 °C

		DRIM	24V – 230V AC/DC
	**Damper Connection Box** (All Voltages).	DCB	24V – 230V AC/DC
	**M5 – 3P – CMS (24V) Control Unit**	M53PCMS	24V AC/DC
	**M5 – 3P – CMS (230V) Control Unit**	230V M53PCMS	230V AC

SmokeShield PTC

I/F

CE Marked 'ES' Rated Fire/Smoke Dampers c/w HEVAC/HVCA Installation Frame. Typically installed into concrete/masonry walls and floors.

HEVAC/HVCA Installation frame (I/F)

- CE marked to EN 15650
- Classified to EN 13501-3: E 120 (Ho Ve i→o) S 20,000
- Fire tested to EN 1366-2
- LPCB Type approved
- Successfully fire tested up to 4 hours integrity.

SmokeShield PTC™ 501 with I/F Installation Frame fixing Method

actionair

SmokeShield PTC™ and I/F Installation (Vertical)

Vertical in block work / Masonry wall HEVAC / HVCA Installation frame (I/F)

1. Measure the positions of the building ties on the HEVAC frame

2. Mark up the lintel at the top of the hole in the wall to give positions that match to the building ties. Drill into the lintel and fit stud anchors or similar steel fixings (min diameter 6.5mm x 60mm)

3. Turn out the building ties on the damper and offer the damper into position, supporting from underneath with a block of wood or board, which will need to be removed when the mortar is in position. If 4 hour Integrity is required pockets in the wall will be required and wall ties turned out into them.

4. Using a 1.5mm steel wire, wrap this round the building ties and the stud anchors in the lintel at the top, to hold the damper in position.

(Note: This will also maintain the quality of the link between the damper, the infill mortar and the wall should a fire occur)

5. Add mortar from both sides of the damper and infill to the HEVAC frame. Take care not to infill past the line on the interface shroud.

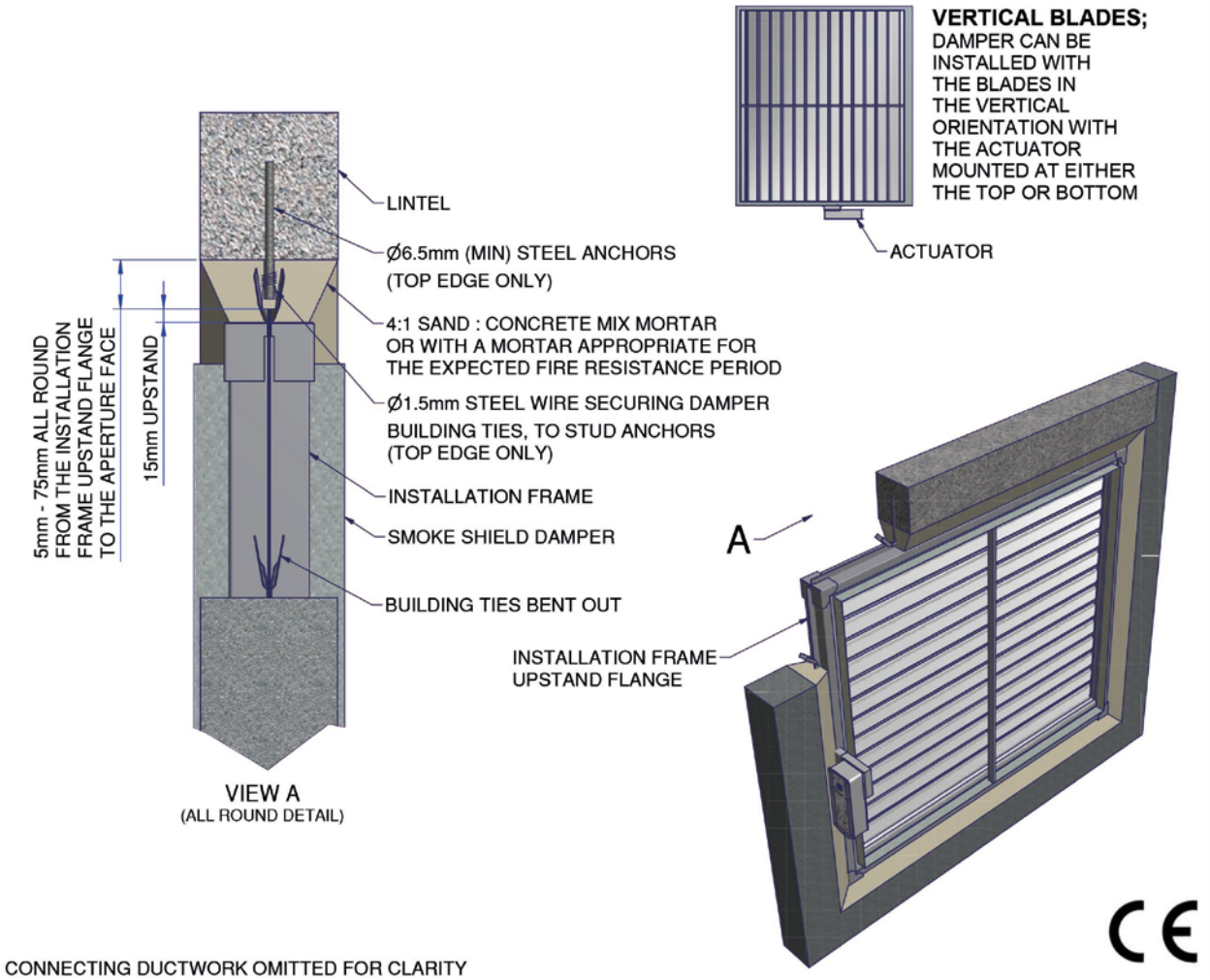
Actuator fitting

1. The control mode/actuator should then be fitted using the instructions supplied with it.

2. Using the supplied drilling template, drill into the ductwork and fit the Electrical Thermal Release (ETR) into the duct.

3. A special feature of the Actionair SmokeShield modes is that they may be adjusted from pointing straight out along the duct (standard configuration) through 90° to point either upward or downwards if required.

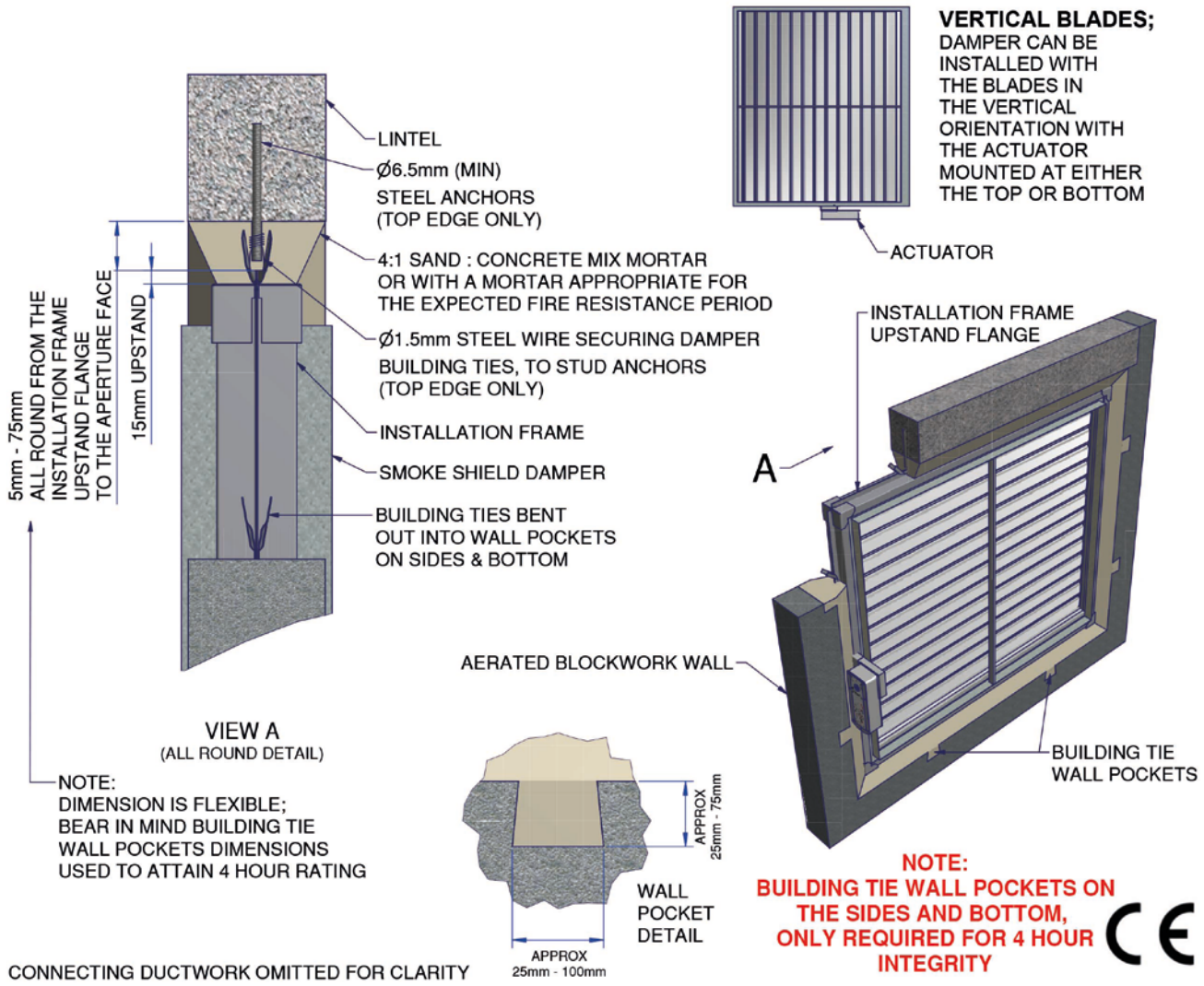
4. The mode should be wired into the system using the site wiring detail, plus the details shown on the label.



Continue onto next page

SmokeShield PTC™ and I/F Installation (Vertical)

Vertical in block work / Masonry wall HEVAC / HVCA Installation frame (I/F)



SmokeShield PTC™ and I/F Installation (Horizontal)

Horizontal in floor slab HEVAC / HVCA Installation frame (I/F)

1. Measure the positions of the building ties on the HEVAC frame

2. Mark up the inside edges of the hole in the slab to give positions that match to the building ties. Drill into the floor slab and fit stud anchors (or similar) – leaving them protruding into the opening

3. Turn out the building ties on the damper and offer the damper into position.

4. Using steel wire (min diameter 1.5mm), wrap this round the building ties and the stud anchors to hold the damper in position.

(Note: This will also maintain the quality of the link between the damper, the infill mortar and the floor slab should a fire occur)

5. Shutter beneath the damper (if required) and add mortar from the top of the slab and infill to the HEVAC frame. Take care not to infill past the line on the interface shroud if the motor is to be fitted above the slab.

6. When the mortar is firm remove the shuttering (if applied) and infill with more mortar to the HEVAC frame from below the slab. Take care not to infill past the line on the interface shroud if the actuator is to be fitted below the slab.

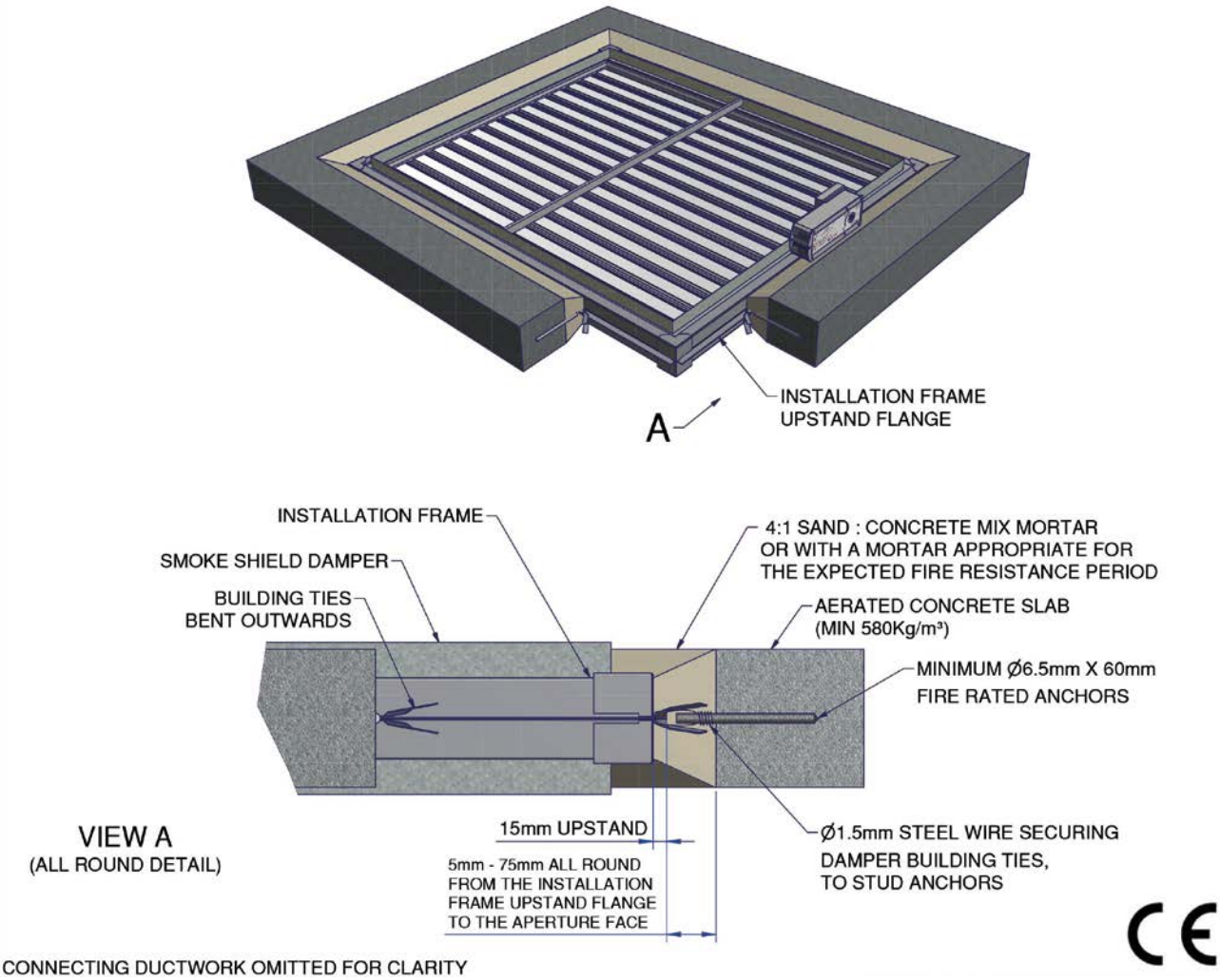
Actuator fitting

1. The control mode/actuator should then be fitted using the instructions supplied with it.

2. Using the supplied drilling template, drill into the ductwork and fit the Electrical Thermal Release (ETR) into the duct.

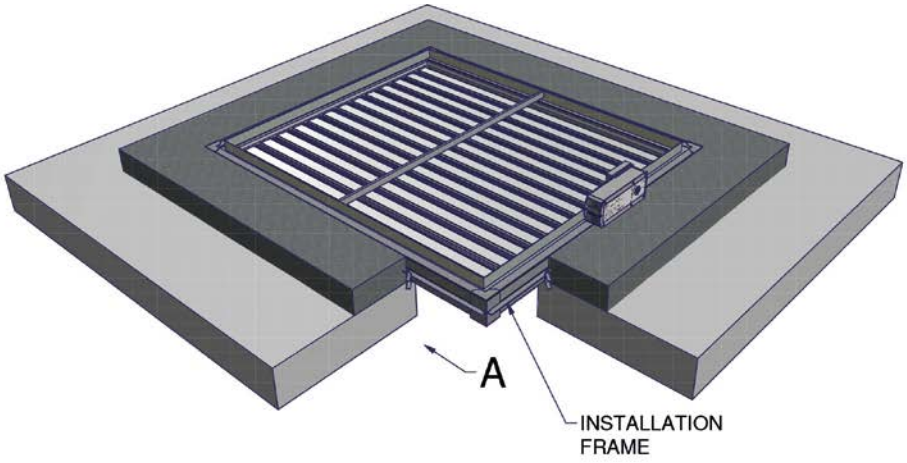
3. A special feature of the Actionair SmokeShield modes is that they may be adjusted from pointing straight out along the duct (standard configuration) through 90° to point either left or right if required.

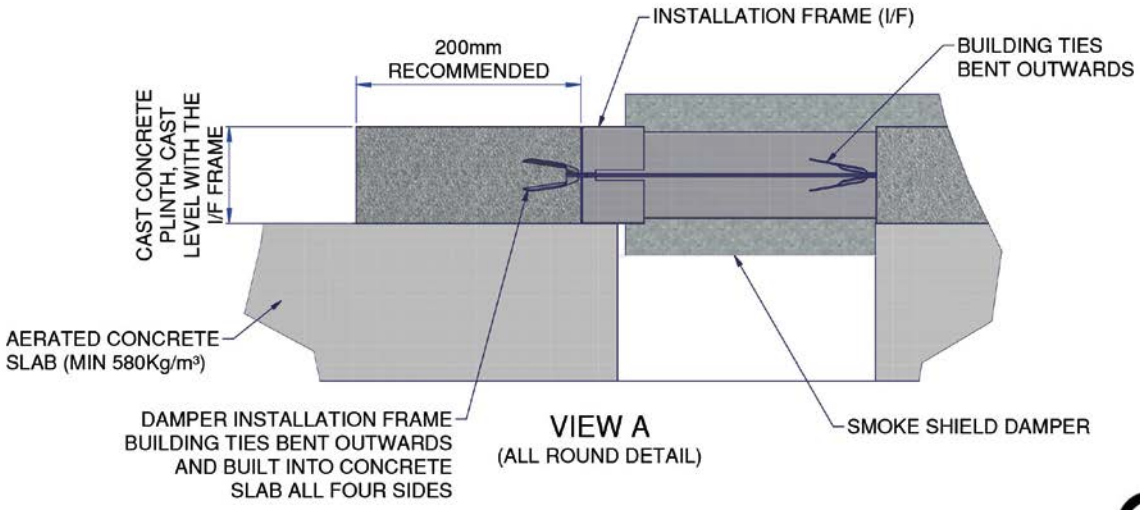
4. The mode should be wired into the system using the site wiring detail, plus the details shown on the label.



SmokeShield PTC™ and I/F Installation (Horizontal)

Horizontal in floor slab HEVAC / HVCA
Installation frame (I/F)





CE

CONNECTING DUCTWORK OMITTED FOR CLARITY

SmokeShield PTC™ and IF Installation Dimensional Data

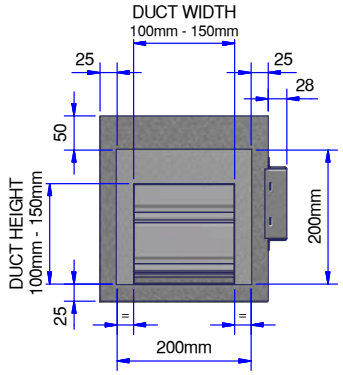
Base Dampers

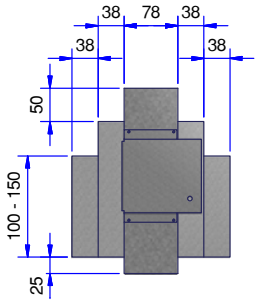
Rectangular Dampers Series 501

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

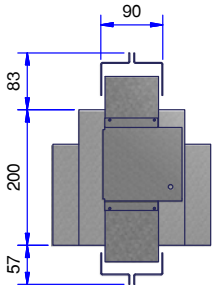
Dampers with I/F Installation Frames

FOR DUCT WIDTHS AND HEIGHTS OF 100-150MM

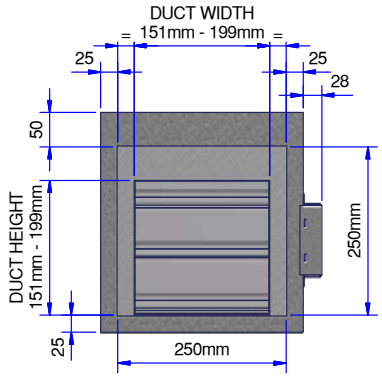


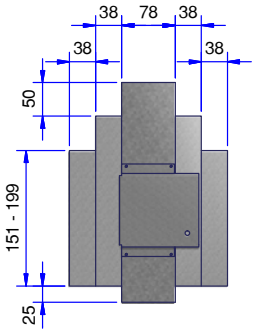


OVERALL WIDTH OF INSTALLTION FRAME IS 314mm
OVERALL HEIGHT OF INSTALLATION FRAME IS 340mm

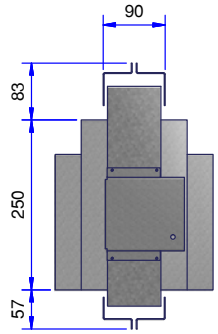


FOR DUCT WIDTHS AND HEIGHTS OF 151-199MM

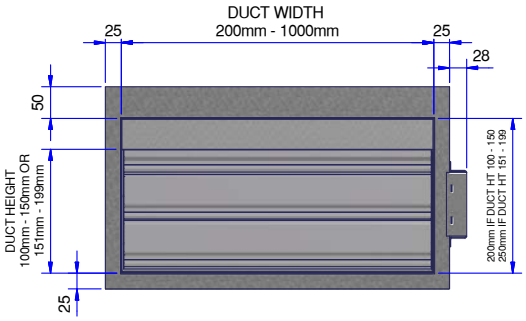


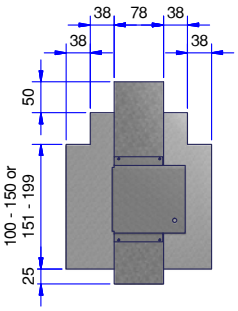


OVERALL WIDTH OF INSTALLATION FRAME IS 364mm
OVERALL HEIGHT OF INSTALLATION FRAME IS 390mm

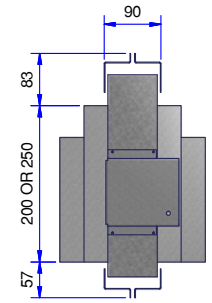


FOR DUCT WIDTHS 200MM - 1000MM WITH HEIGHTS OF 100-199MM

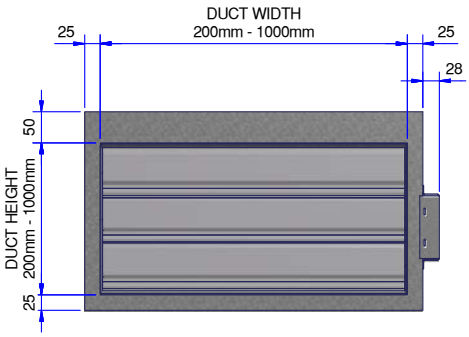


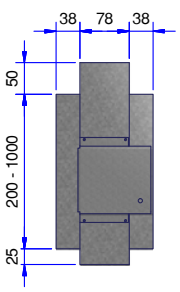


FOR OVERALL HEIGHTS SEE 100 - 150mm
OR 151 - 199mm AS ABOVE

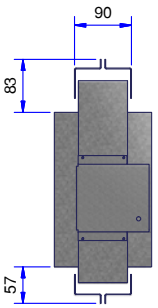


FOR DUCT WITH WIDTHS AND HEIGHTS OF 200 - 1000MM





OVERALL WIDTH OF INSTALLATION FRAME DUCT WIDTH + 114mm - OVERALL HEIGHT OF INSTALLATION FRAME DUCT HEIGHT + 140mm



Base Dampers

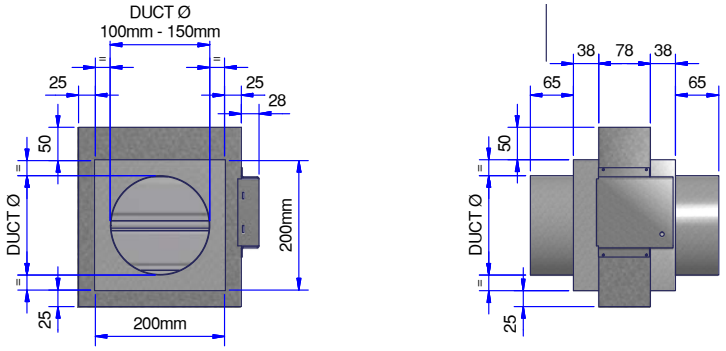
Circular Dampers Series 601

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

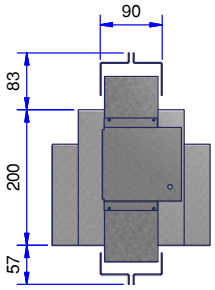
Dampers with I/F Installation Frames

Circular Dampers Series 601

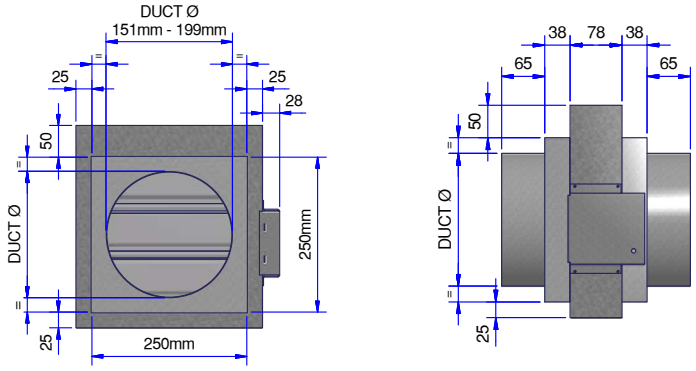
FOR DAMPERS 100-150MM



OVERALL WIDTH OF INSTALLTION FRAME IS 314mm
OVERALL HEIGHT OF INSTALLATION FRAME IS 340mm

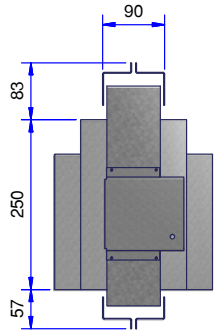


FOR CIRCULAR DAMPERS SERIES 601, DIAMETERS 151-199MM

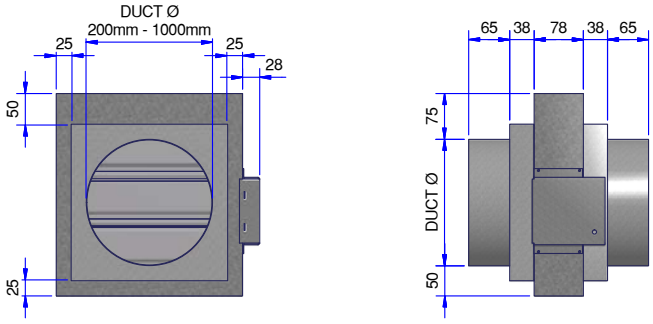


OVERALL WIDTH OF INSTALLATION FRAME IS 364mm

OVERALL HEIGHT OF INSTALLATION FRAME IS 390mm

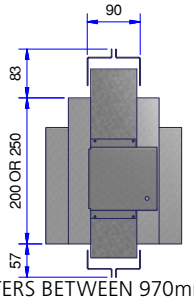


FOR CIRCULAR DAMPERS SERIES 601, DIAMETERS 200-1000MM



OVERALL WIDTH OF INSTALLATION FRAME = DUCT DIA + 166MM

OVERALL HEIGHT OF INSTALLATION FRAME = DUCT DIA + 190MM

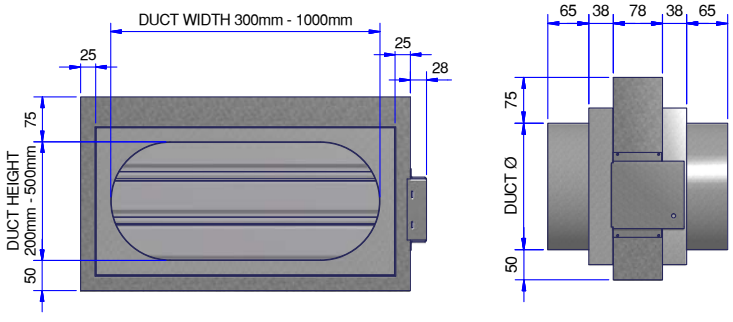


FOR DUCT DIAMETERS BETWEEN 970mm - 1000mm

OVERALL WIDTH OF FLANGE WIDTH IS 1198mm

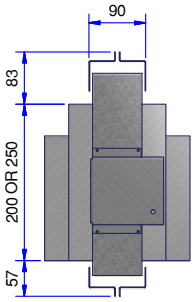
OVERALL HEIGHT OF INSTALLATION FRAME IS 1195mm

Flat Oval Dampers Series 701



OVERALL WIDTH OF INSTALLATION FRAME = DUCT DIA + 166MM

OVERALL HEIGHT OF INSTALLATION FRAME = DUCT DIA + 190MM



FOR DUCT WIDTHS BETWEEN 970mm - 1000mm
OVERALL WIDTH OF INSTALLATION FRAME IS 1198mm

SmokeShield PTC™

DWFX-C

CE Marked 'ES' Rated Fire/Smoke Dampers c/w Dry Wall Fix Cleats. Typically installed prior to encasement by the dry wall partition

- Dry wall fix 'Cleats' Typically fixed prior to encasement by the dry wall partition
- CE marked to EN 15650
- Classified to EN 13501-3: E 120 (Ve i→o) S 20,000
- Fire tested to EN 1366-2
- LPCB Type approved

Smokeshield PTC™ 501 with DWFX-C support cleats fixing method

SmokeShield PTC™ and DWFX-C Installation

Enclosure by drywall partition (DWFX-C)

1. Fit track (of partition) to the ceiling

2. Suspend the damper from the ceiling so plasterboard does not pass the 'backfill line' on Damper Interface Shroud, using M10 drop rods

3. Frame out the damper using tracks and studs lined with board. This is done with a lined track above the damper crossing between the nearest two full height studs, two vertical lined studs as close to the damper as possible (outside the cleats) from the top cross track to the floor and a lined cross track below the damper between the two vertical studs

4. Build the partition to the track and stud framework, coming as close to the damper as possible.

5. Insulate the wall with mineral/stone wool

6. Seal the damper to the partition with intumescent sealant and add patresses to both sides down to the damper spigot. Seal these to the damper spigot with intumescent sealant.

7. Finish the wall as standard practice. Actuator fitting (If required).

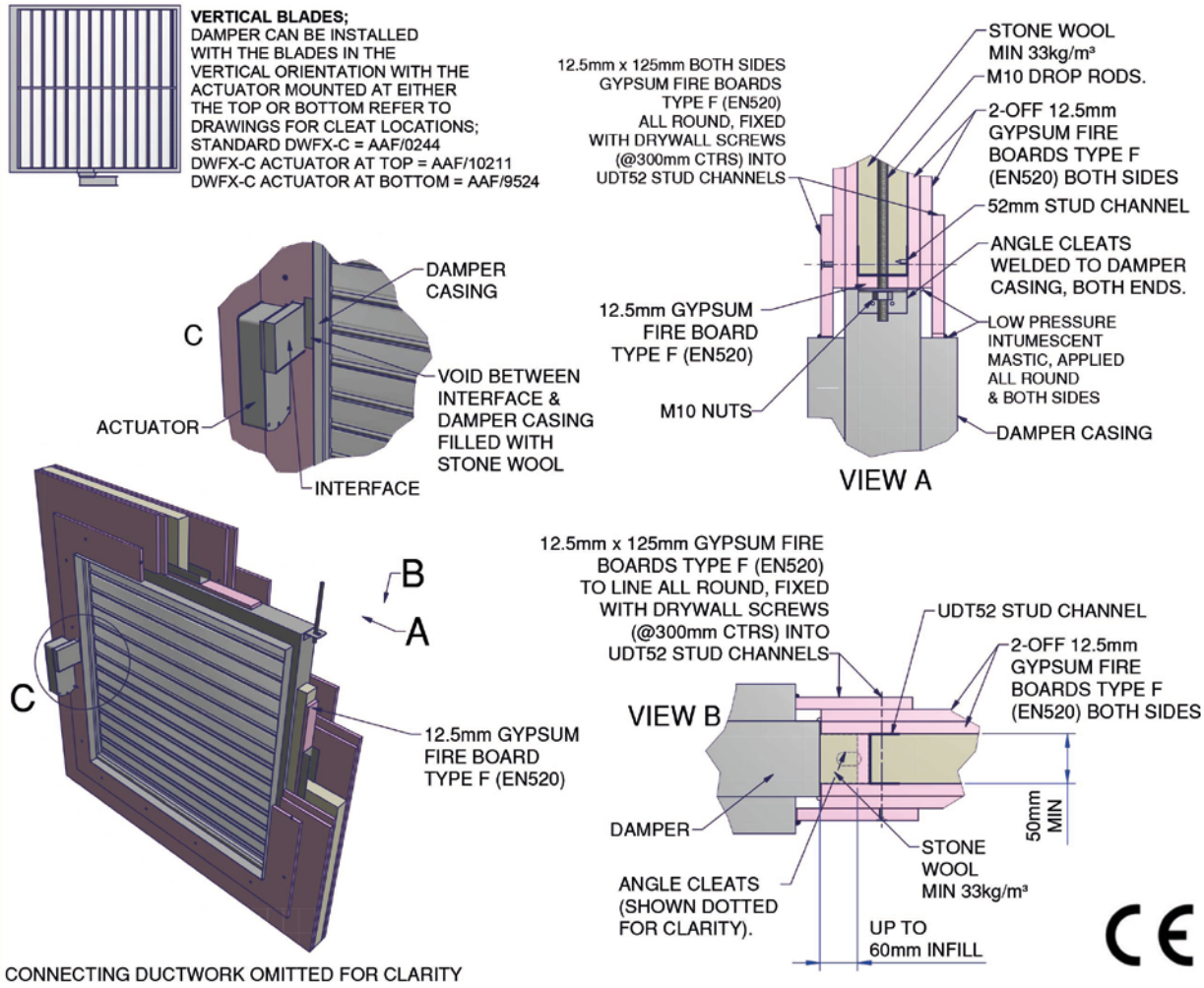
Actuator fitting

1. The control mode/actuator should then be fitted using the instructions supplied with it.

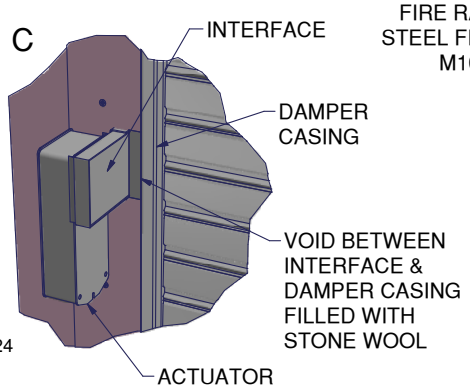
2. Using the supplied drilling template, drill into the ductwork and fit the Electrical Thermal Release (ETR) into the duct.

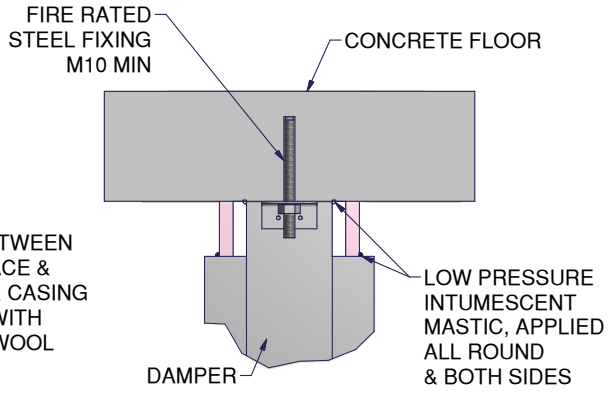
3. A special feature of the Actionair SmokeShield modes is that they may be adjusted from pointing straight out along the duct (standard configuration) through 90° to point either up or down if required.

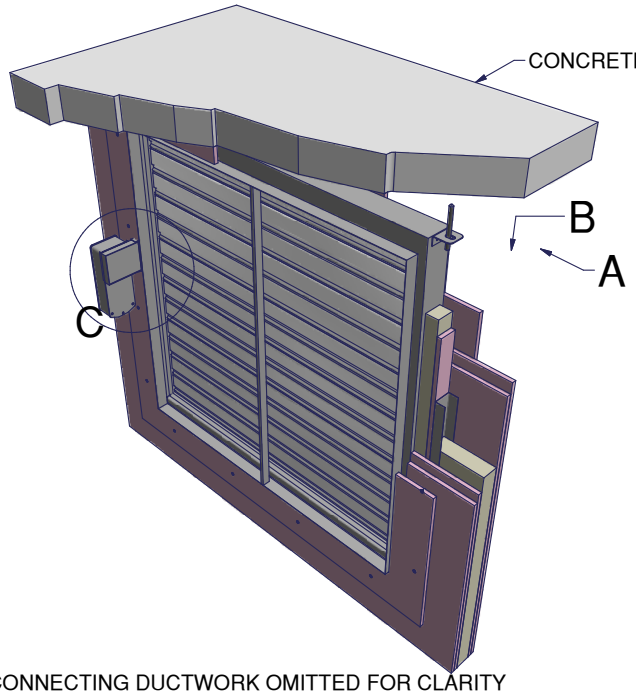
4. The mode should be wired into the system using the site wiring detail, plus the details shown on the label.



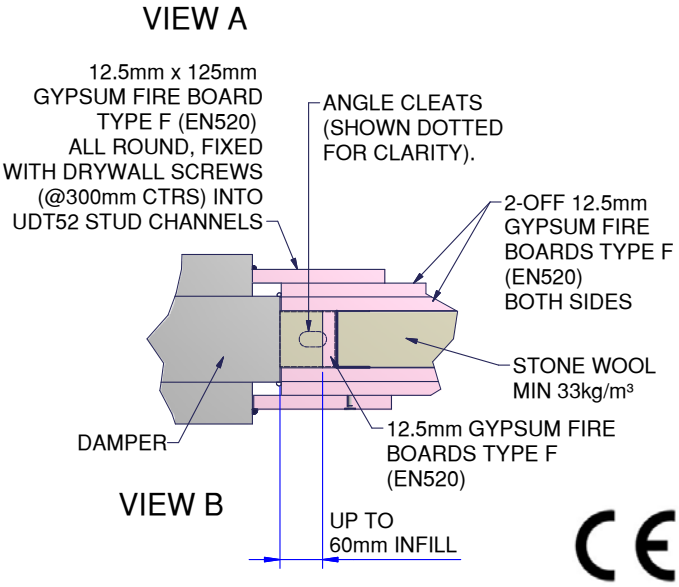
VERTICAL BLADES;
DAMPER CAN BE INSTALLED WITH THE BLADES IN THE VERTICAL ORIENTATION WITH THE ACTUATOR MOUNTED ON THE BOTTOM REFER TO DAMPER ASSEMBLY DRAWINGS FOR CLEAT LOCATIONS;
STANDARD DWFX-C = AAF/0244
DWFX-C ACTUATOR AT BOTTOM = AAF/9524



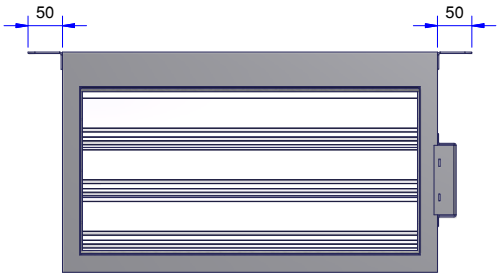


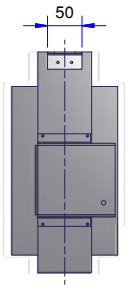


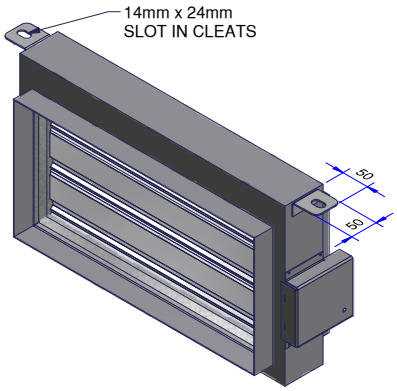
CONNECTING DUCTWORK OMITTED FOR CLARITY



SmokeShield PTC™ and DWFX-C Installation Dimensional Data







SmokeShield PTC™

DWFX-F

CE Marked 'ES' Rated Fire/Smoke Dampers c/w Dry Wall Fix Flange and Cleats Typically installed into existing dry wall partition

- DWFX-F fix 'flange and cleats' for use in existing masonry and dry wall partitions
- CE marked to EN 15650
- Classified to EN 13501-3: E 120 (Ve i→o) S 20,000
- Fire tested to EN 1366-2
- LPCB Type approved

SmokeShield PTCTM 501 with DWFX-F Installation Fixing Method

actionair

SmokeShield PTC™ and DWFX-F Installation

Existing drywall partition (DWFX-F)

1. Measure the overall damper casing size, include the PTC shroud, but do not include the peripheral flange.

2. Calculate the finished hole size by adding 25mm ± 5mm to both width and height.

3. Calculate the hole to cut size by adding two board thicknesses to the finished hole width and height.

4. Mark out the hole on the partition and cut it out, cutting the top and bottom edges first to maintain stability.

5. Frame out the hole with stud and track and cover this with board. Finish edges with joint filler.

6. 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.

7. Using suitable M10 fire resisting fixings into the soffit, install M10 studding drop rods to suspend the damper through the angle cleats. Use M10 nuts and washers on the underside of the cleat ONLY

8. Using 44mm long self drilling dry wall screws fix the DWFX-F flange through into drywall steel channel, as shown. Back fill with mineral/stone wool and patress over this down to the spigot.

Actuator fitting

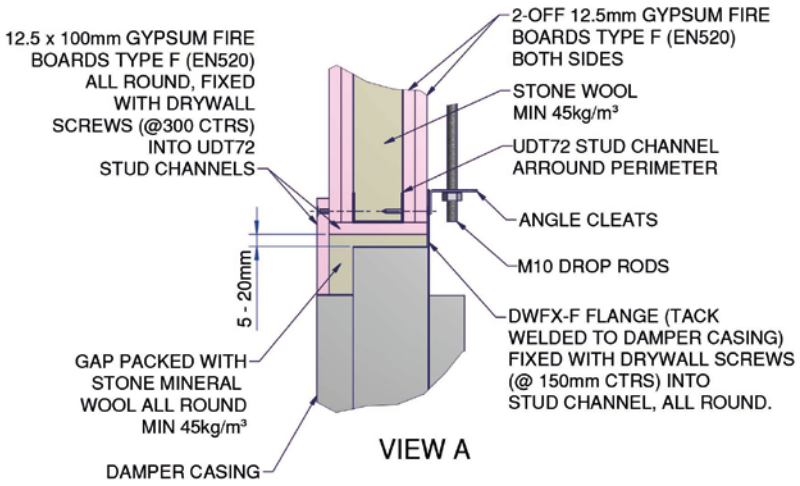
1. The control mode/actuator should then be fitted using the instructions supplied with it.

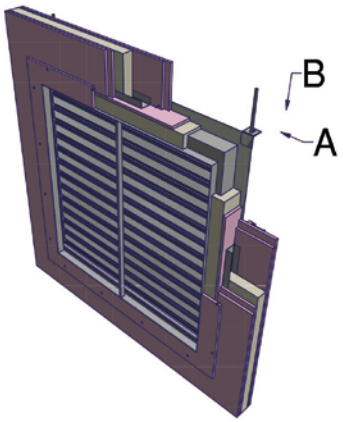
2. Using the supplied drilling template, drill into the ductwork and fit the Electrical Thermal Release (ETR) into the duct.

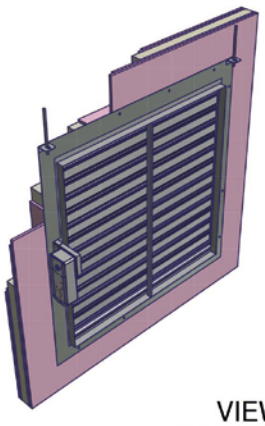
3. A special feature of the Actionair SmokeShield modes is that they may be adjusted from pointing straight out along the duct (standard configuration) through 90° to point either up or down if required.

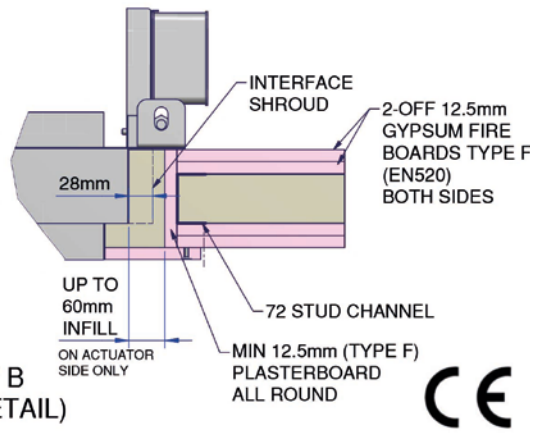
4. The mode should be wired into the system using the site wiring detail, plus the details shown on the label.

VERTICAL BLADES;
DAMPER CAN BE INSTALLED WITH THE BLADES IN THE VERTICAL ORIENTATION WITH THE ACTUATOR MOUNTED AT EITHER THE TOP OR BOTTOM. REFER TO DRAWING SF029 FOR CLEAT LOCATIONS









CONNECTING DUCTWORK OMITTED FOR CLARITY

SmokeShield PTC™ and DWFX-F Installation

Masonry Wall (DWFX-F)

1. Drill clearance holes in the damper flange at 150mm centres

2. Install the damper and fix through flange using steel anchors min Ø6.5mm

3. Back fill between damper casing and wall, with mineral/stone wool and secure in place with angle retaining flanges, fixed in corners, or with 'Z' shaped retaining flanges, to give the option of face fixing onto wall. Note: either angle, or 'Z' retaining flanges to be supplied by others.

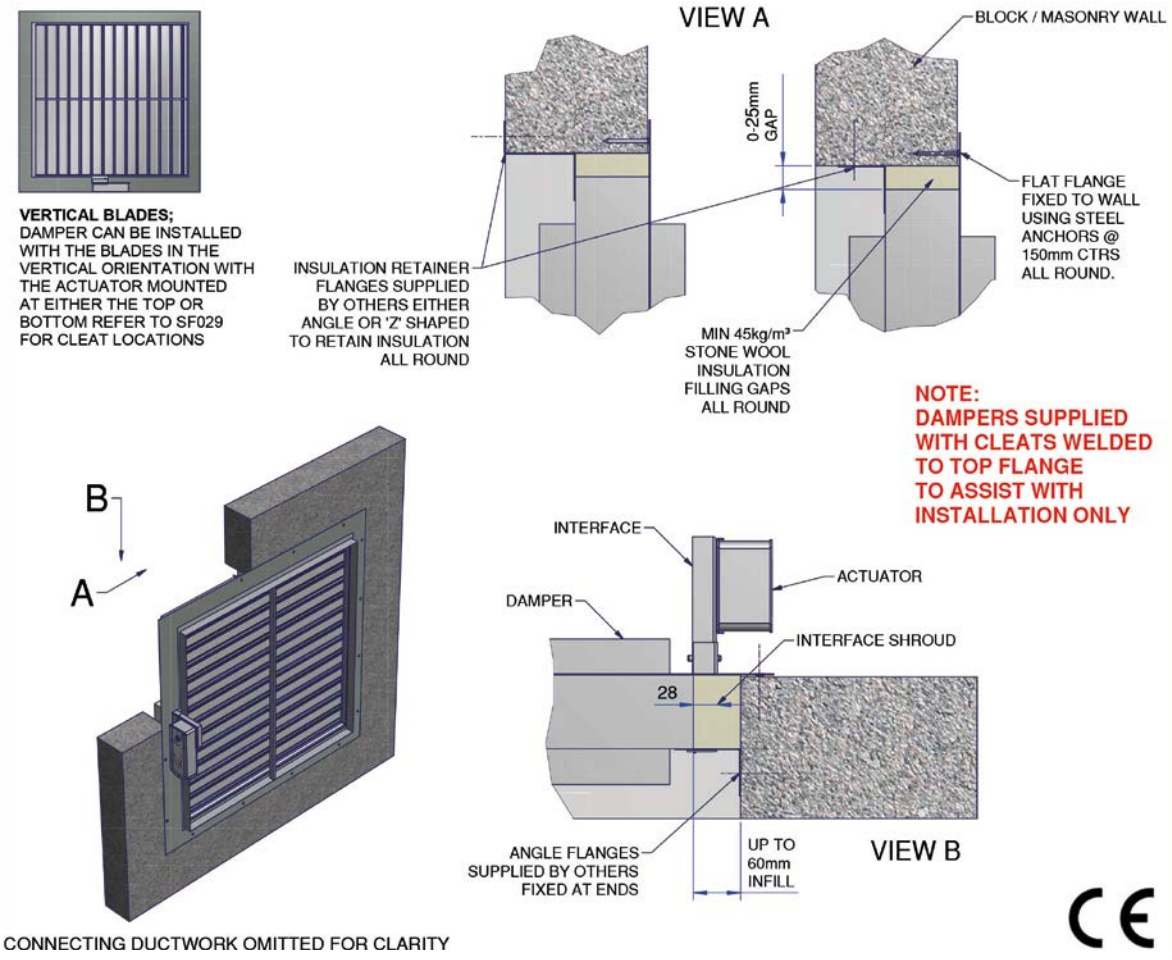
Actuator fitting

1. The control mode/actuator should then be fitted using the instructions supplied with it.

2. Using the supplied drilling template, drill into the ductwork and fit the Electrical Thermal Release (ETR) into the duct.

3. A special feature of the Actionair SmokeShield modes is that they may be adjusted from pointing straight out along the duct (standard configuration) through 90° to point either up or down if required.

4. The mode should be wired into the system using the site wiring detail, plus the details shown on the label.



Damper Installation Method

1) Mark out the hole on the partition and cut it out, cutting the top and bottom edges first to maintain stability.

2) Frame out the hole with stud and track and cover this with 2 layers of board. Finish edges with joint filler.

3) Rivet steel duct (by others) to damper spigot on non access side, using steel rivets.

4) Rivet support angle cleats supplied by actionair to duct section.

5) Suspend the damper from the ceiling, using 10mm studding drop rods, and support the damper from lateral movement.

6) Make sure the area within the aperture and the damper casing is free from any debris and remove any dust.

7) Where the coated BATT will contact the surrounding aperture apply Rockwool acoustic intumescent sealant to the outer edges of the BATT. Where two coated BATTS are in contact use Rockwool fire pro glue as the joint adhesive. In both cases ensure that an even cover is achieved over the entire thickness of the BATT.

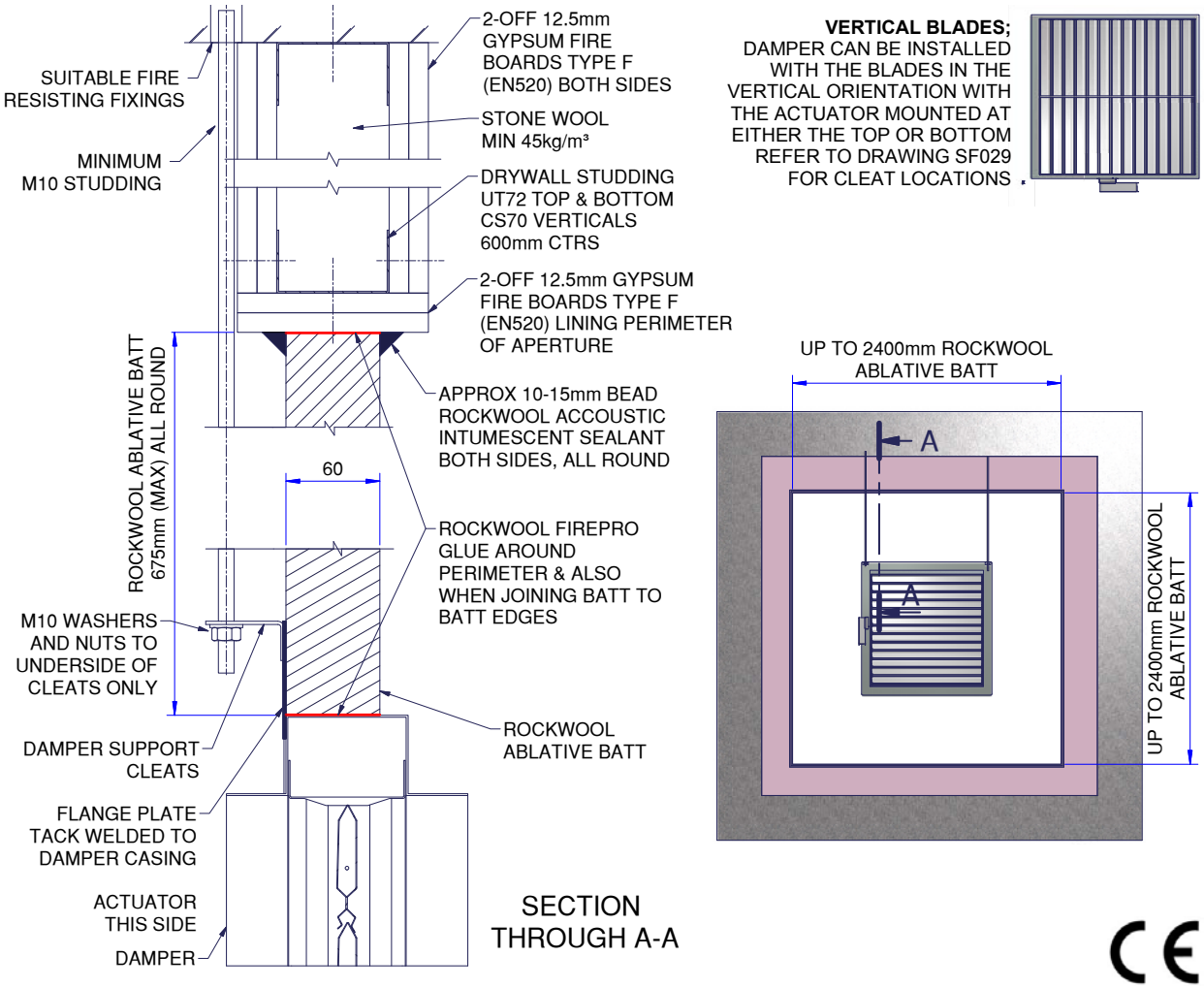
8) Continue installation of Rockwool ablative coated BATT, until aperture is completely filled.

9) Apply a bead of Rockwool acoustic sealant to both sides of the wall, approximately 15mm wide, around the perimeter of the aperture between dry wall and BATT, ensuring that any gaps between the BATT and surrounding edges are fully filled.

10) Allow 12 hours for BATT penetration seal to cure prior to removing any lateral damper supports.

Ductwork

Ductwork to be fitted and connected to damper spigots in accordance with DW144 & DW145. Aluminium rivets should be used to act as a breakaway joint, unless fire resisting ductwork is being used where fire resting fixings should be used.



Damper Installation Method

1. Suspend the damper from the ceiling, using 10mm studding drop rods, and support the damper from lateral movement.

2. Make sure the area within the aperture and the damper casing is free from any debris and remove any dust.

3. Where the coated BATT will be in contact with the surrounding aperture and where two coated BATTs are in contact use Rockwool fire pro glue, ensuring that an even cover is achieved over the entire thickness of the BATT.

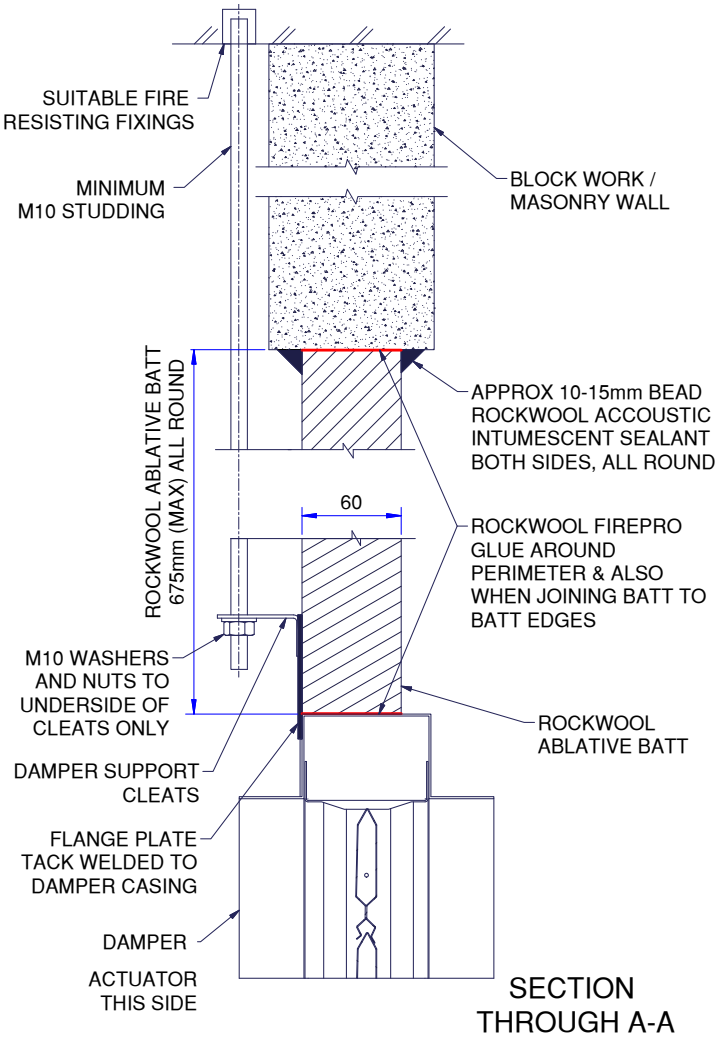
4. Continue installation of Rockwool ablative coated BATT, until aperture is completely filled.

5. Apply a bead of Rockwool acoustic sealant to both sides of the wall, approximately 15mm wide around perimeter of the aperture between wall and BATT, ensuring that any gaps between the BATT and surrounding edges are fully filled.

6. Allow 12 hours for BATT penetration seal to cure prior to removing any lateral damper supports.

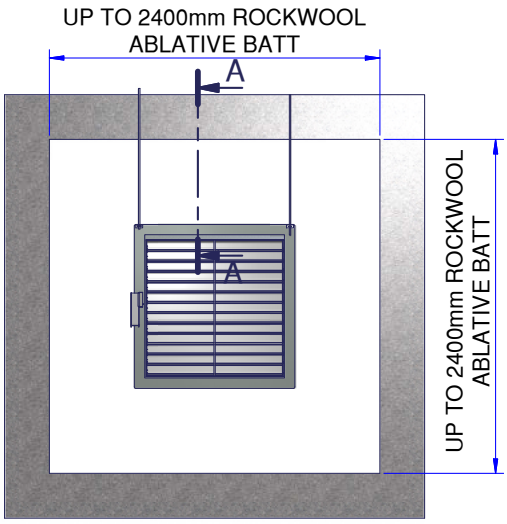
Ductwork

Ductwork to be fitted and connected to damper spigots in accordance with DW144 & DW145. Aluminium rivets should be used to act as a breakaway joint, unless fire resisting ductwork is being used where fire resting fixings should be used.



SECTION THROUGH A-A

VERTICAL BLADES;
DAMPER CAN BE INSTALLED WITH THE BLADES IN THE VERTICAL ORIENTATION WITH THE ACTUATOR MOUNTED AT EITHER THE TOP OR BOTTOM REFER TO DRAWING SF029 FOR CLEAT LOCATIONS.



CE

SmokeShield PTC™ and DWFX-F Installation Dimensional Data

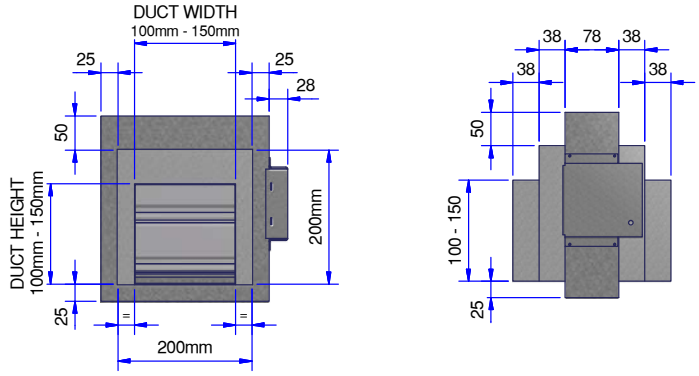
Base Dampers

Rectangular Dampers Series 501

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

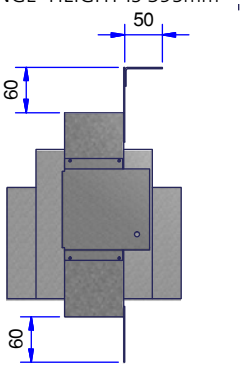
Dampers with DWFX-F Installation Frames

FOR DUCT WIDTHS AND HEIGHTS OF 100-150MM

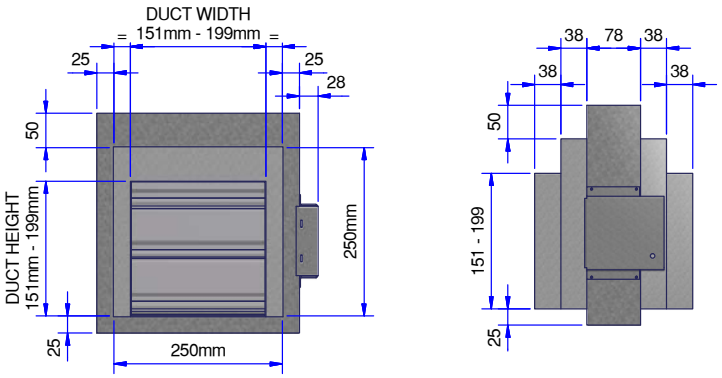


OVERALL FLANGE WIDTH IS 398mm

OVERALL FLANGE HEIGHT IS 395mm

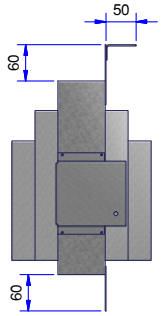


FOR DUCT WIDTHS AND HEIGHTS OF 151-199MM

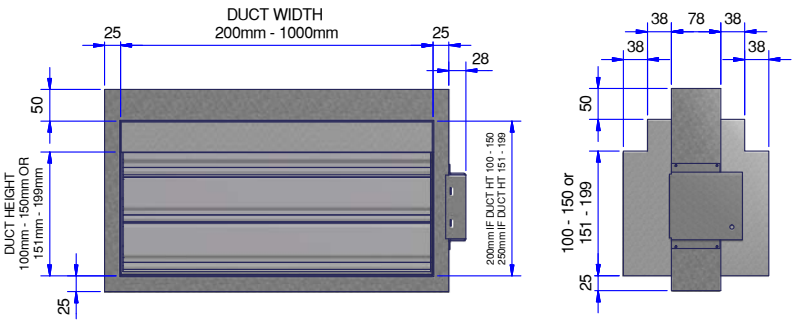


OVERALL FLANGE WIDTH IS 448mm

OVERALL FLANGE HEIGHT IS 445mm

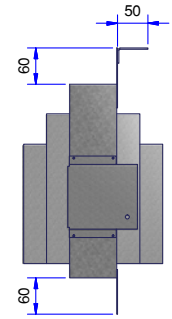


FOR DUCT WIDTHS 200MM - 1000MM WITH HEIGHTS OF 100-199MM

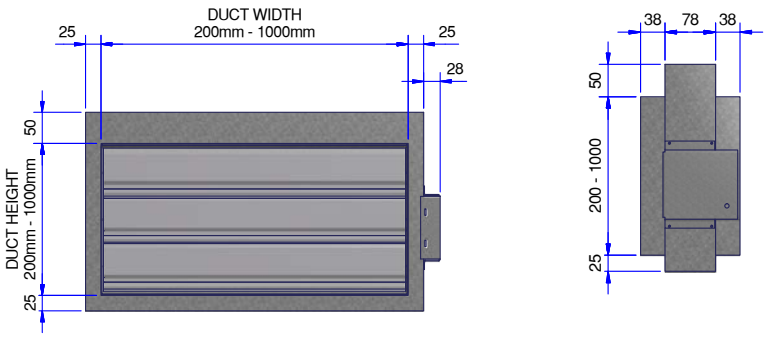


FOR OVERALL HEIGHTS SEE 100 - 150mm

OR 151 - 199mm AS ABOVE

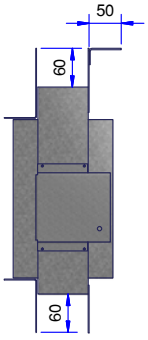


For Ducts with widths and heights of 200 - 1000mm



OVERALL FLANGE WIDTH DUCT WIDTH + 198mm

OVERALL FLANGE HEIGHT DUCT HEIGHT + 195mm



Base Dampers

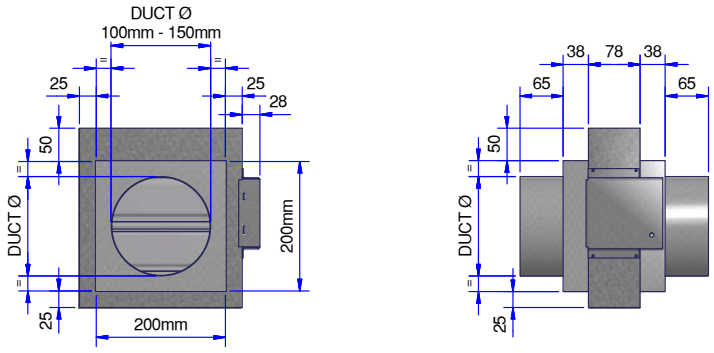
Circular Dampers Series 601

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

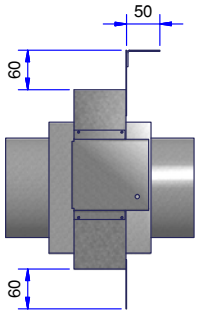
Dampers with DWFX-F Installation Frames

Circular Dampers Series 601

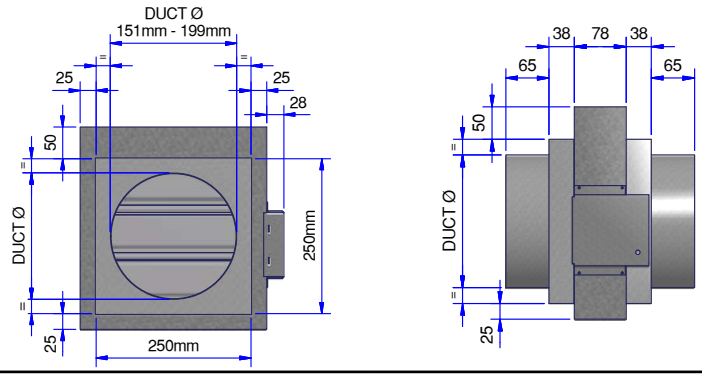
FOR DAMPERS 100-150MM



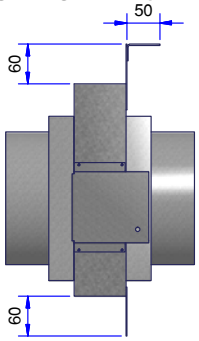
OVERALL FLANGE WIDTH = 398mm
OVERALL FLANGE HEIGHT = 395mm



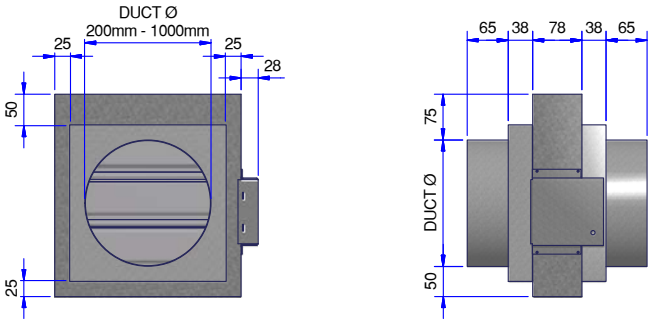
FOR CIRCULAR DAMPERS SERIES 601, DIAMETERS 151-199MM



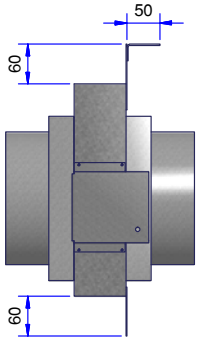
OVERALL FLANGE WIDTH = 448mm
OVERALL FLANGE HEIGHT = 445mm



FOR CIRCULAR DAMPERS SERIES 601, DIAMETERS 200-1000MM

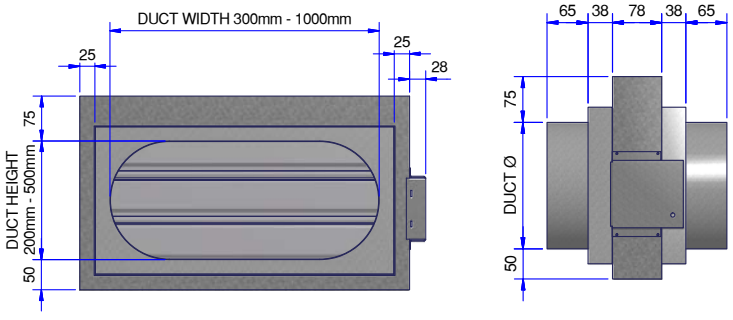


OVERALL FLANGE WIDTH = DUCT DIA + 248mm
OVERALL FLANGE HEIGHT = DUCT DIA + 245mm

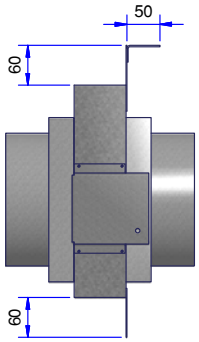


FOR DUCT DIAMETERS BETWEEN 970mm - 1000mm
OVERALL WIDTH OF FLANGE WIDTH IS 1198mm
OVERALL HEIGHT OF INSTALLATION FRAME IS 1195mm

Flat Oval Dampers Series 701



OVERALL FLANGE WIDTH = DUCT DIA + 248mm
OVERALL FLANGE HEIGHT = DUCT DIA + 245mm



FOR DUCT WIDTHS BETWEEN 970mm - 1000mm
OVERALL WIDTH OF INSTALLATION FRAME IS 1198mm

SmokeShield PTC™

Sleeve & Angle

CE Marked 'ES' Rated Fire/Smoke Dampers c/w Sleeve and Angle (S&A) Fixing Flanges and Cleats. Typically installed into concrete/masonry walls, floors and dry walls

For use with masonry and dry walls with ablative batt infill surround

- CE marked to EN 15650
- Classified to EN 13501-3:
  E 120 (Ve i→o) S 20,000
  E 90 (Ho i→o) S 20,000
  E 120 (Ho i→o) 20,000
- Fire tested to EN 1366-2
- LPCB Type approved

SmokeShield PTC™ and S&A (Shown being assembled)

SmokeShield PTC™ and Sleeve and Angle (S&A)

Drywall partition, Sleeve and Angle (S&A)

1. Measure the overall damper casing size, include the PTC shroud, but do not include the peripheral flange

2. Calculate the hole to cut size by adding two board thicknesses, +10mm tolerance, to the finished hole width and height

3. Mark out the hole on the partition and cut it out, cutting the top and bottom edges first to maintain stability

4. Frame out the hole with stud and track and cover this with a layer of board. Finish edges with joint filler.

5. Rivet steel duct, (by others) to damper spigot on non access side, using steel rivets.

6. Rivet support angle cleats, supplied by Actionair, to duct section.

7. Using suitable M10 fire resisting fixings into the soffit, install M10 studding drop rods to suspend the damper through the angle cleats. Use M10 nuts and washers on the underside of the cleat ONLY.

8. Fix 4-off angles to steel duct, non access side, using steel rivets.

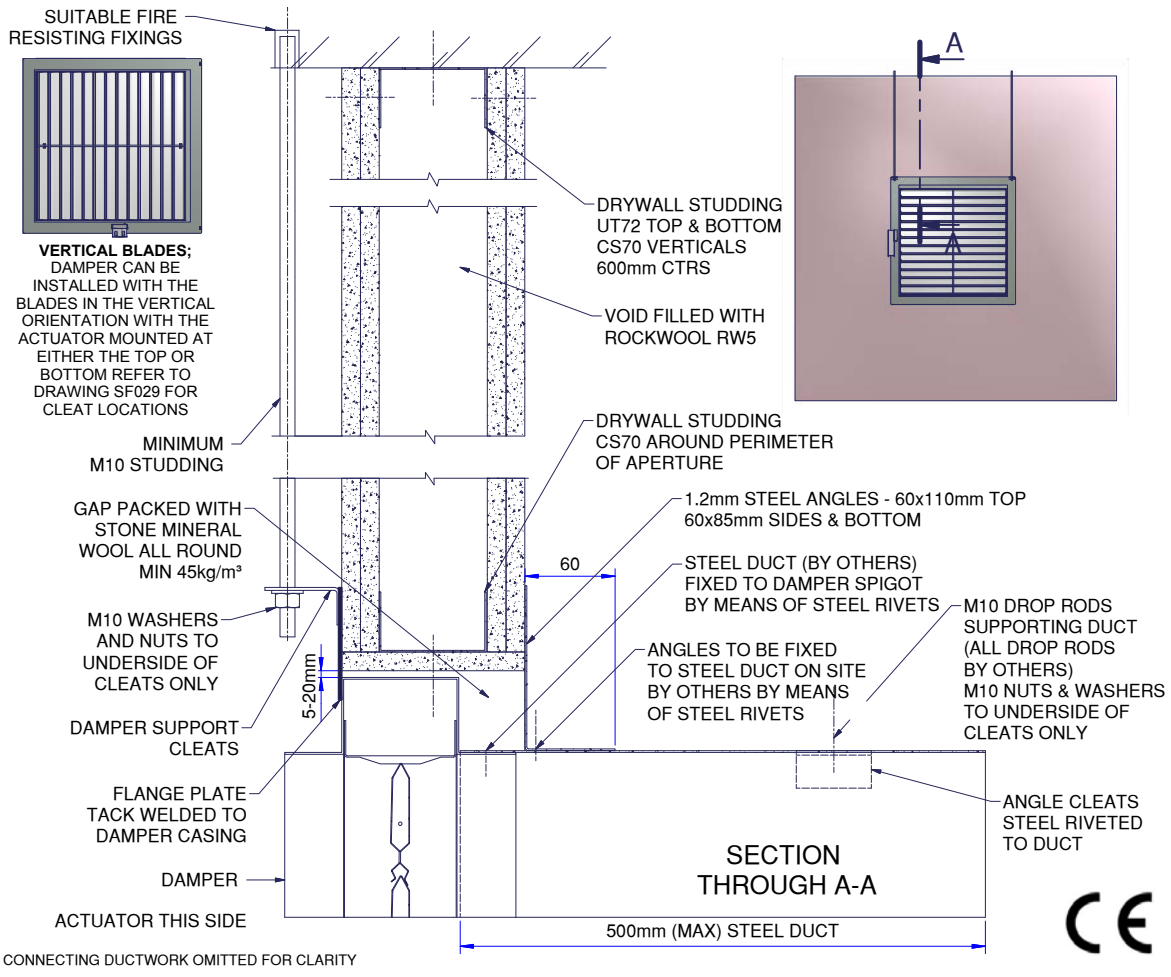
Actuator fitting

1. The control mode/actuator should then be fitted using the instructions supplied with it.

2. Using the supplied drilling template, drill into the ductwork and fit the Electrical Thermal Release (ETR) into the duct.

3. A special feature of the Actionair SmokeShield modes is that they may be adjusted from pointing straight out along the duct (standard configuration) through 90° to point either up or down if required.

4. The mode should be wired into the system using the site wiring detail, plus the details shown on the label.



Masonry Wall, Sleeve and Angle (S&A)

1. Rivet steel duct, (by others) to damper spigot on non access side, using steel rivets.

2. Rivet support angle cleats, supplied by Actionair, to duct section.

3. Using suitable M10 fire resisting fixings into the soffit, install M10 studding drop rods to suspend the damper through the angle cleats. Use M10 nuts and washers on the underside of the cleat ONLY.

4. Fix 4-off angles to steel duct, non access side, using steel rivets.

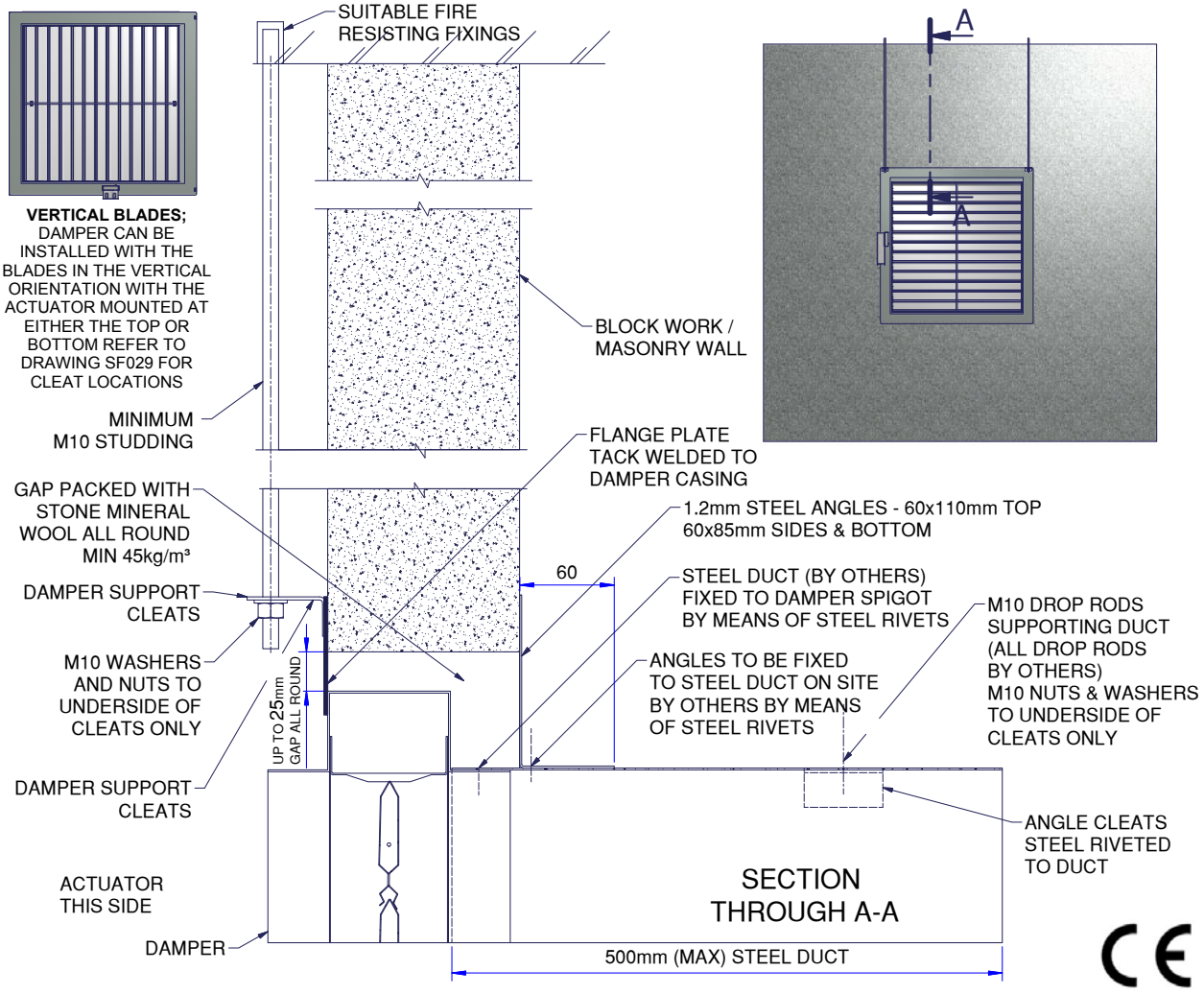
Actuator fitting

1. The control mode/actuator should then be fitted using the instructions supplied with it.

2. Using the supplied drilling template, drill into the ductwork and fit the Electrical Thermal Release (ETR) into the duct.

3. A special feature of the Actionair SmokeShield modes is that they may be adjusted from pointing straight out along the duct (standard configuration) through 90° to point either up or down if required.

4. The mode should be wired into the system using the site wiring detail, plus the details shown on the label.



Horizontal in floor slab Sleeve and Angle (S&A)

1. Position and fix the unistrut supports to the underside of the slab, at either end using M10 fire rated fixings. Leave some clearance between unistrut supports, so the damper and duct section can be lowered in easily.

2. Fix perimeter steel angles to the underside of the slab, which support the Ablative Batts, with M10 fire firated fixings

3. Fix section of duct to the damper spigot on the access side (if the actuator is located upwards).

4. Lower the damper and duct section into and onto the supporting unistrut sections, making sure you allow suficient space to fit the required motor/ actuator (if required).

5. Make sure the area within the aperture and the damper casing is free from any debris and remove any dust.

6. Where the coated Batt contacts the surrounding aperture, damper casing and flange, or where two coated Batts are in contact, use Rockwool fire pro glue as the adhesive.

7. Continue installation of Rockwool ablative coated BATT, until aperture is completely filled.

8. Ablative coated Batt is not intended for maintaining the load bearing capability of the floor. Suitable precautions such as adequate safety rail and signage should be adopted to raise awareness and potential accidents.

9. The damper requires suitable support on the floor side, by others.

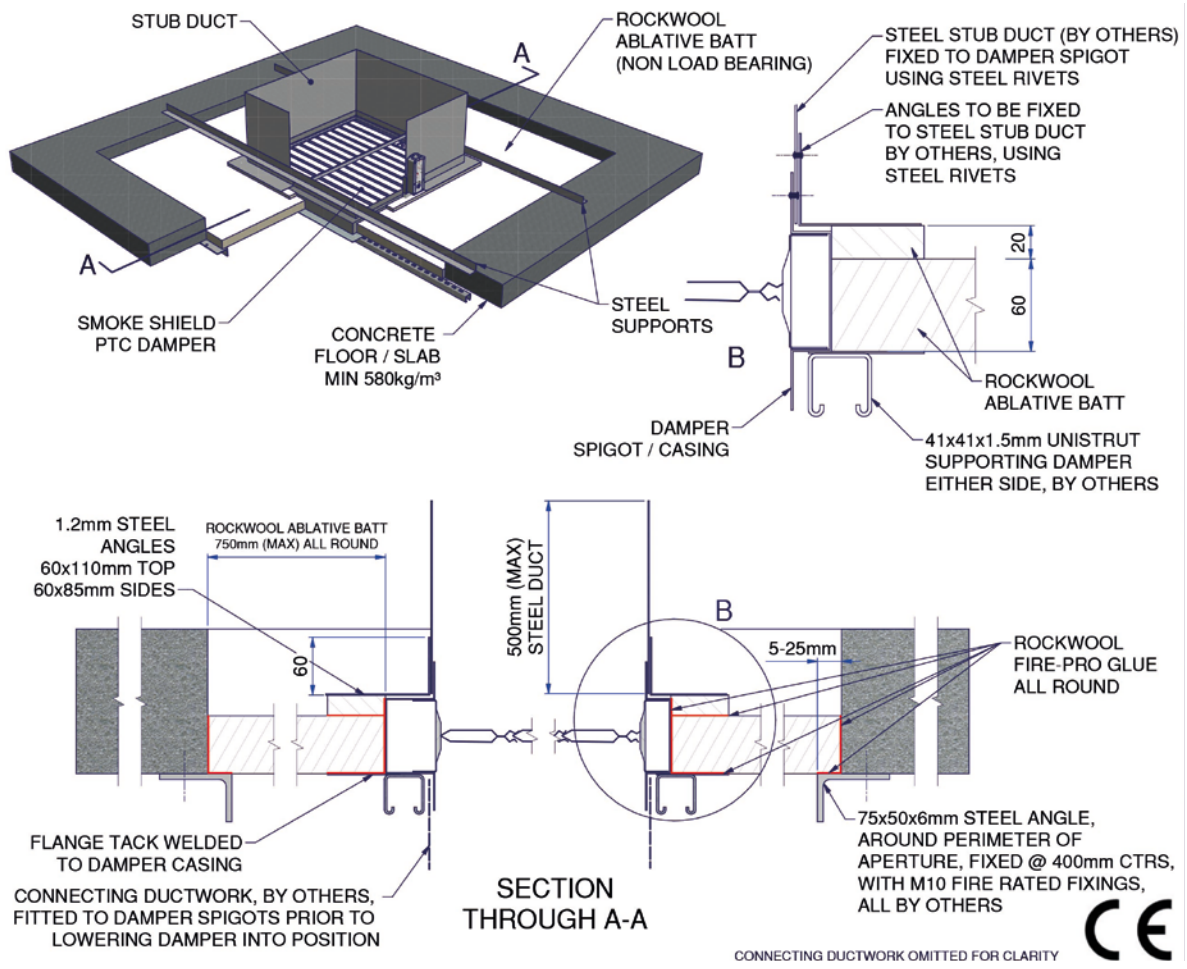
Actuator fitting

1. The control mode/actuator should then be fitted using the instructions supplied with it.

2. Using the supplied drilling template, drill into the ductwork and fit the Electrical Thermal Release (ETR) into the duct.

3. A special feature of the Actionair SmokeShield modes is that they may be adjusted from pointing straight out along the duct (standard configuration) through 90° to point either up or down if required.

4. The mode should be wired into the system using the site wiring detail, plus the details shown on the label.



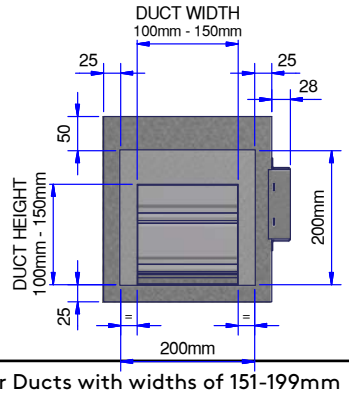
Base Dampers

Rectangular Dampers Series 501

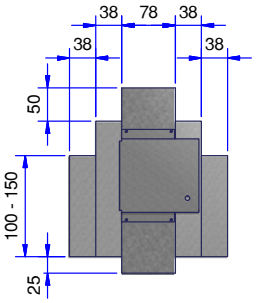
For Rectangular Dampers spigots are 5mm under duct size.
Widths and heights available in 1mm increments.

Dampers with S&A Installation Frames

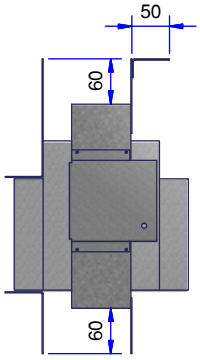
For Ducts with widths of 100-150mm



For Ducts with heights of 100-150mm

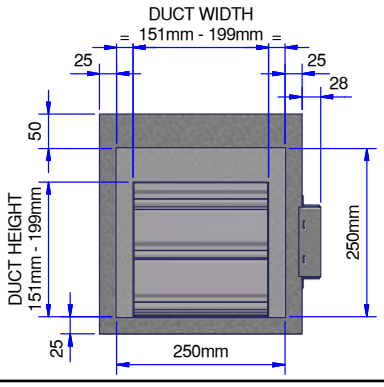


OVERALL FLANGE WIDTH IS 398mm
OVERALL FLANGE HEIGHT IS 395mm

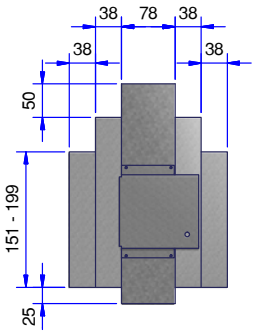


*Note: Cleats are not supplied for floor slab.

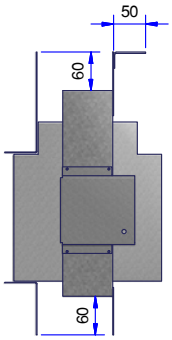
For Ducts with widths of 151-199mm

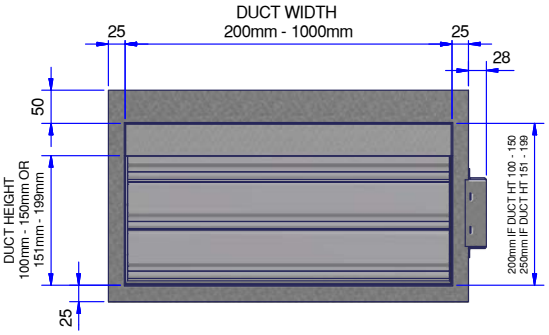


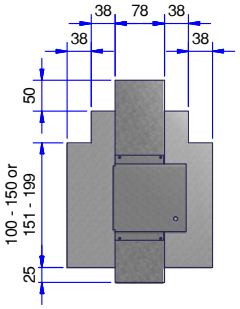
For Ducts with heights of 151-199mm



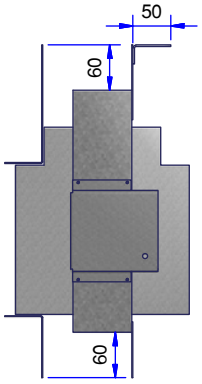
OVERALL FLANGE WIDTH IS 448mm
OVERALL FLANGE HEIGHT IS 445mm



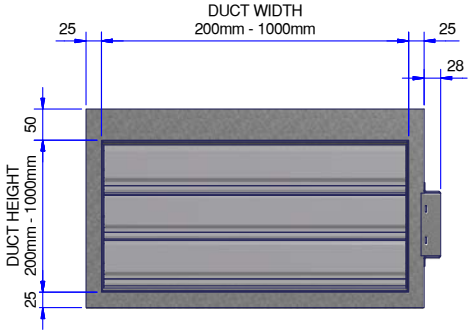


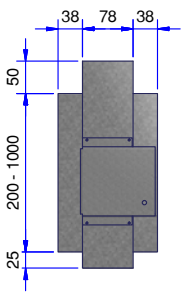


FOR OVERALL HEIGHTS SEE 100 - 150MM OR
151 - 199MM AS ABOVE

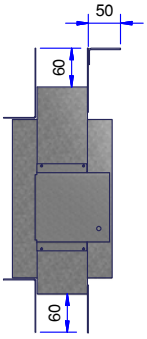


For Ducts with widths and heights of 200 - 1000mm





OVERALL FLANGE WIDTH DUCT WIDTH + 198mm
OVERALL FLANGE HEIGHT + DUCT HEIGHT + 195mm



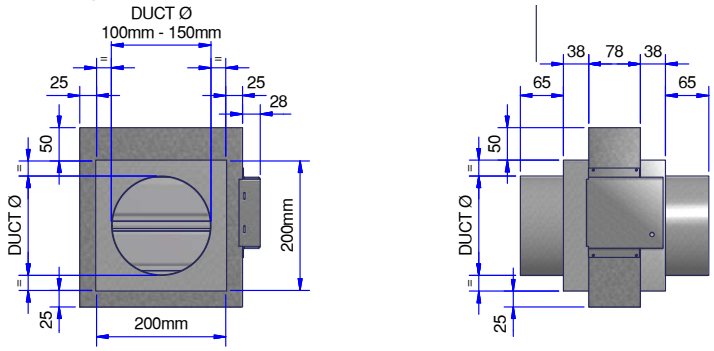
Base Dampers

Circular Dampers Series 601

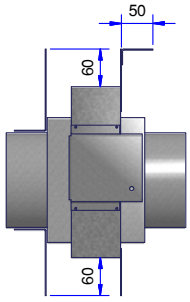
For Rectangular Dampers spigots are 5mm under duct size.
Widths and heights available in 1mm increments.

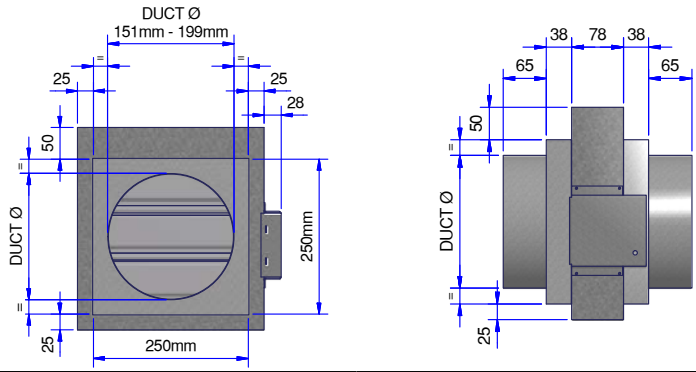
Dampers with S&A Installation Frames

Circular Dampers Series 601

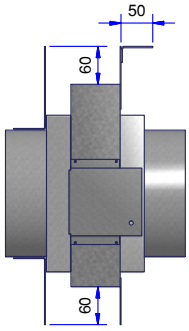


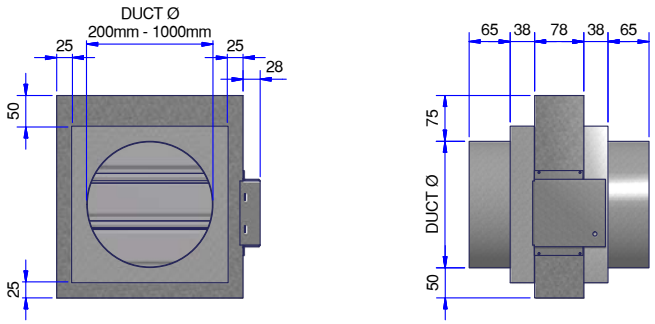
OVERALL FLANGE WIDTH = 448mm
OVERALL FLANGE HEIGHT = 445mm



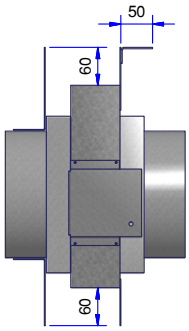


OVERALL FLANGE WIDTH = 448mm
OVERALL FLANGE HEIGHT = 445mm



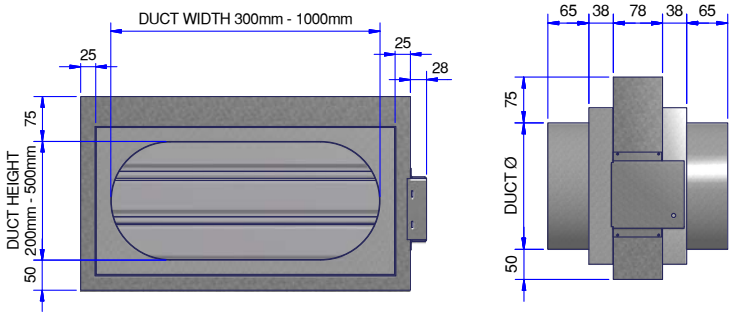


OVERALL FLANGE WIDTH = DUCT DIA + 248mm
OVERALL FLANGE HEIGHT = DUCT DIA + 245mm

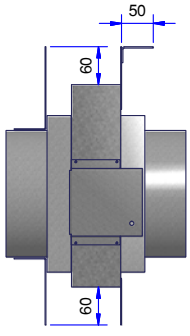


FOR DUCT DIAMETERS BETWEEN 970mm - 1000mm
OVERALL WIDTH OF FLANGE WIDTH IS 1198mm
OVERALL HEIGHT OF INSTALLATION FRAME IS 1195mm

Flat Oval Dampers Series 701

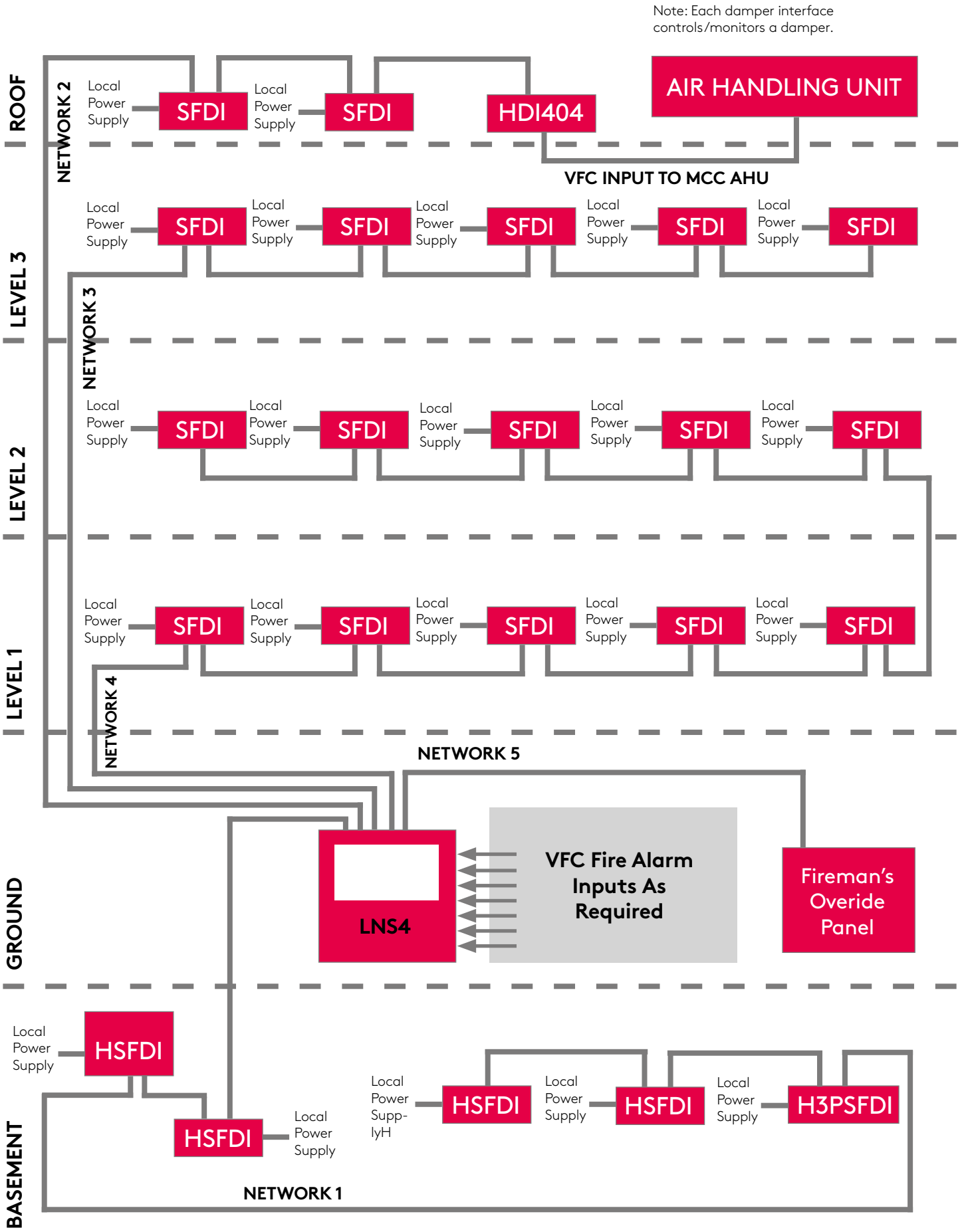


OVERALL FLANGE WIDTH = DUCT DIA + 248mm
OVERALL FLANGE HEIGHT = DUCT DIA + 245mm



FOR DUCT WIDTHS BETWEEN 970mm - 1000mm
OVERALL WIDTH OF INSTALLATION FRAME IS 1198mm

Typical Network Schematic.



Actionpac Damper Control Systems

Addressable Systems

Actionpac LITE 80 (LNS)

Intelligent Damper Control and Monitoring System

Actionpac LITE 80 for the control / monitoring of up to 80 off SmokeShield dampers.

Actionpac LNS4

Intelligent Damper Control and Monitoring System

The Actionpac LNS4 system represents a new generation of Fire/Smoke damper control. The system has been designed with the user in mind, providing an advanced tool that simplifies installation and commissioning of Fire/Smoke dampers and peripheral devices. The Panel PC operates on a Windows™ platform making it universally accepted and utilises solid state technology for optimum reliability.

It's server architecture delivers new benefits such as reduced commissioning time, simplified operation and scope for future growth.

The Actionpac LNS4 system is designed to protect life and property from damage caused by smoke and fire, by providing the means to:-

- Compartmentalise fire zones.
- Reduce the spread of smoke and fire.
- Keep escape routes and fire-fighting access open.
- Allow pressurisation and smoke extract by combined operation of dampers and fans.

Benefits

- Actionair experience and know-how in the damper market
- Actionair Fire/Smoke Dampers LPCB approved
- Allows for phased commissioning and future expansion
- Backward compatible
- CE marked, EMC and LVD compliant
- Customer testimonials available
- Hundreds of prestigious reference sites
- Powerful and very flexible functionality accommodates any last minute changes to strategy, zones, damper quantities, references and descriptions etc and enables standardisation of software (no bespoke site specific versions required)
- Off site system witnessing can be arranged
- Open and interoperable protocol (LonWorks®) allows possible support by others and future proof lifecycle preventative maintenance costs
- Optional networking of panels to a central control and monitoring panel - up to 32 networked panels to meet practically any building's damper requirements
- Optional remote access via internet
- System designed to cater for environmental occupancy (energy saving) as well as the building's smoke/ fire strategy

Electro Mechanical Systems

Actionpac EMS

Standard Control and Monitoring System

Control and monitoring of Mode 5 or Mode 6 damper actuators in groups of EMS 15 or EMS 30.

Actionpac EMB

Bespoke Control and Monitoring System Control Panel

The EMB Control Panels typically consists of the appropriate number of switches to provide individual or group control, LED indication for status monitoring and all necessary relays and timers to comply with the customer needs for fully or semi automatic damper operation. The EMB panels are purposely manufactured for any particular project to suit specific client requirements.

Tests and Approvals

Seismic Qualification

SS501PTC, have been subjected to triaxial seismic qualification tests in accordance with BNFL Technical Services Report ET 372 Schedule No. Twelve, to the levels detailed in Costain Document 6733-0250-064-10-0020, Rev C, Specification for Diesel Generator and Load Bank. The testing was also in general accordance with IEEE 344-2004 IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations – Time History Method.

Approvals

SmokeShield PTC™ Approvals:
CE marked to Product Standard
EN 15650:2010
Fire tested to EN 1366-2
Classified to EN 13501-3 – ES Rated

Factory Production Control to EN15650
This includes:
20,000 cycle tested
Daily blade and casing leakage testing
Corrosion tested to EN 60068-2-52:
1996 satisfy the requirements of
LPS 1162.
Thermal fuse tested to ISO 10294-4

Low gas/smoke and fire integrity to Classification ES in vertical and horizontal test installations.

An LPCB approved product, compliant to the new Loss Prevention Council Design Guide for Fire Protection of Buildings. Fire tested in vertical and horizontal applications under dynamic conditions by The Loss Prevention Council.

Complies with the latest DW 144 casing leakage specification.

The Electrical Control Modes satisfy requirements of the following standard(s) or other normative documents, EN 6100-6-2 / EN 6100-6-3 / EN60730-1 / EN 60730-2-14 following the provision of Directive 2004/108/EG, 2006/95/EG.

CE

EC DECLARATION OF PERFORMANCE

RAM-F-024 A

Smoke Shield PTC I/F fire damper
Smoke Shield PTC DWFX-F fire damper
Smoke Shield PTC DWFX-C fire damper
Smoke Shield PTC S&A fire damper
Smoke Shield PTC OSF fire damper

Complying with the following EU Regulation:
305/2011/EEC : Construction Products Regulation

Swegon Air Management LTD
Actionair, South Street, Whitstable, Kent CT5 3DU

System 1
BRE Global Limited - NB0832
Performed the determination of the product type on the basis of type testing (including sampling), and the initial inspection of the manufacturing plant and of factory production control and continuous surveillance, assessment and evaluation of factory control under system 1 and issued the certificate of constancy of conformity of the factory production control (0832-CPR-P0002)

Declared performance according to:
BS EN 15650 'Ventilation for buildings: Fire Dampers'

REQUIRED PERFORMANCES ACCORDING TO BS EN 15650:2010

Fire resistance according to EN 1366-2 and classifications according to EN 13501-3:

RANGE	TYPE	WALL / FLOOR	CLASSIFICATION
200-1000mm X 200-1000mm	SS I/F (AAF10700 & AAF8018)	Floor	E120(ho i→o)S - (300Pa)
200-1000mm X 200-1000mm	SS I/F (AAF10702)	Rigid Wall	E120(ve i→o)S - (300Pa)
200-1000mm X 200-1000mm	SS DWFX-F (AAF10704, AAF10706 AAF10710, AAF7012)	Flexible & rigid Wall	E120(ve i→o)S - (300Pa)
200-1000mm X 200-1000mm	SS DWFX-C (AAF10708 AAF10730)	Flexible Wall	E120(ve i→o)S - (300Pa)
200-1000mm X 200-1000mm	SS S&A (AAF10724)	Floor	E90(ho i→o)S - (300Pa)
200-1000mm X 200-1000mm	SS S&A (AAF10724)	Floor	E120(ho i→o) - (300Pa)
200-1000mm X 200-1000mm	SS S&A (AAF10714 & 10716)	Floor	E120(ho i→o) - (300Pa)S
200-1000mm X 200-1000mm	SS OSF (RD14699)	Floor	E90(ho i→o)S - (300Pa)
200-1000mm X 200-1000mm	SS OSF (RD14699)	Floor	E120(ho i→o) - (300Pa)

Nominal activation conditions/sensitivity according to ISO 10294-4 - Sensing element - Response behaviour - Sensing element - Faulty set-off	Pass
Response delay (response time) according to EN 1366-2: - closure time	Pass
Operational reliability according to EN 1366-2: - cycling	Pass
Durability of response delay according to EN 1366-2: - sensing element response temperature and load bearing capacity	Pass
Durability of operational reliability according to EN 15650: - open and closing cycle	10,000 cycles nominal voltage - Pass Additionally - 25,000 cycles nominal voltage - Pass 100 cycles nominal voltage -10% - Pass 100 cycles nominal voltage +15% - Pass

OPTIONAL PERFORMANCES ACCORDING TO EN 15650 AND NATIONAL REQUIREMENTS	
Protection against corrosion according to EN 60068-2-52:	Pass
Damper casing leakage according to EN 1751:	Class C
Damper blade leakage according to EN 1751:	Class 3

Signed for and on behalf of the manufacturer by:
Kevin Munson
Managing Director
South street,
Whitstable,
Kent,
England

CE

Revision 6 - 15/02/2016

actionair | air diffusion | airfiltrera | airolution | naco
Stourbridge Rd, Bridgnorth, WV15 5BB, Shropshire, UK
Phone: +44 (0) 1746 761921
Joseph Wilson Ind Est, Whitstable, CT5 3DU, Kent, UK.
Phone: +44 (0) 1227 276100
sales@swegonair.co.uk
www.swegonair.co.uk
registered office - swegon air mar
Stourbridge Rd, Bridgnorth,WV15 5BB, Shropshire,UK

Approximate Weights (Kg)

Square or Circular Duct Size (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Series 501 Square	3.4	3.4	3.4	4.2	4.8	5.6	6.5	7.4	8.6	9.6	10.8	12.4	13.6	14.9	16.2	17.7	19.2	20.8	23.5
Series 501 Square + I/F	6.2	6.2	6.2	7.4	8.7	10.3	11.9	13.2	14.6	16.3	18.5	20.5	22.1	24.0	25.9	28.1	30.3	32.4	34.5
Series 601 Circular	5.3	5.3	5.3	6.1	7.2	8.4	9.6	11.2	12.6	14.0	15.9	17.5	19.1	20.7	22.5	24.3	26.2	29.3	32.1
Series 601 Circular + I/F	8.5	8.5	8.5	10.0	11.9	13.7	15.4	17.1	19.2	21.8	24.0	26.0	28.2	30.4	32.8	35.3	37.8	40.3	43.1

Control Mode 1 (including drive interface) 4.1Kg
Control Modes 5, 5-3P (including drive interface) 4.4Kg

Ordering Information

Example

Quantity	Series	Fixing Options	Duct Size	Control Mode	Acessories
3	SS501/PTC	I/F	600(W) x (H)450	M5	

Number of units required

SS501/PTC
SmokeShield PTC™ Square or Rectangular
(Fail-safe closed)

SS601/PTC
SmokeShield PTC™ Circular
(Fail-safe closed)

SS701/PTC
SmokeShield PTC™ Flat Oval
(Fail-safe closed)

1. DWFX-F
Dry Wall Fixing System
Flange plus Cleats

2. DWFX-C
Dry Wall Fixing System
Cleats

3. I/F HEVAC / HVCA
Installation Frame

4. S&A
Sleeve and Angle

M5 PTC
24V 10W (12.5VA)

M6 PTC
230V 12W (14VA)

M5 - 3P PTC
24V 7W (10VA)

Schischek

InMax 15-BF1

InMax 15

RedMax 15-BF1

RedMax 15

ExMax 15-BF1

ExMax 15

Electrical

1. DTU
Damper Test Unit
Damper Test Unit For Control Modes. Spring bias test switch providing iluminated reset and release status

2. DSI
Damper Status Indicator
Reset and Realease Indication

3. DCU
Damper Control Unit
Damper Control Unit For Control Modes. Switch ON/OFF function, reset and release indication

4. DRIM
Damper Release and Indication Module

5. DCB
Connection Box
For Control Modes 5, 5 - 3P and 6 (see page 13)

6. M5 - 3P - CMS
Control Unit

7. 230V M5 - 3P - CMS
Control Unit

Maintenance of Fire Dampers

The SmokeShield PTC™ Dampers are designed for applications in normal dry filtered air systems.

Adequate access must be provided to fire dampers to enable inspection, maintenance and cleaning. This would normally be in the form of access panels/doors. At least one access point is required for access, but access both sides may be required for cleaning (refer to the relevant ductwork cleaning standards) Dampers require cleaning and light oil lubrication.

Regular testing/inspection by suitably qualified personnel shall be undertaken. The requirements in BS 9999 should be checked, as these products may form some part of a controlled system that responds to alarms. Some automatic systems may allow more frequent testing (48 hours or less), but physical inspection is still required at the prescribed intervals. Some systems, where cleanliness is an issue due to site conditions, may require more frequent inspection, testing and cleaning. All such inspections should be recorded.

Quality Assurance

Swegon Air Management Ltd is proud to be ISO 9001 & 14001 accredited.

Customer Service

Actionair provides quality products backed by a dedicated team committed to providing the very best in customer service. Offering experienced technical backup, comprehensive sales and administrative customer support, product commissioning and maintenance service.

actionair | air diffusion | airfiltrera | airolution | naco

South Street,
Whitstable,
Kent, CT5 3DU

Tel: +44 (0)1227 276100
Email: sales@actionair.co.uk
Website: actionair.co.uk

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Swegon
Air Management