

Actionair Smoke/Shield PTC™

Proportional Torque Control
Automatic Smoke and Fire Dampers

Features and Design Guide

Proportional Torque Control for optimised torque performance.

Unique *snaplock*™ drive interface ensures user friendly connection of Control Mode to Damper.

Tested and approved to BS ISO 10294-1:1996, BS EN 1366-2:1999 and BS476 pt. 20:1987 Fire Test Standards.

Smoke/Shield PTC is an LPCB approved product and conforms to the requirements of LPS1162 iss 2.

Easy connection to square, rectangular, circular and flat oval ductwork.

Unique and patented Electrical Thermal Release for ultimate safety.

Halogen Free Low Smoke and Fume cabling supplied as a standard safety feature.

Actionpac Damper Control System compatibility.

Vent/Shield PTC™ reverse action dampers for smoke release or exhaust applications.

Pneumatic Option.



Introduction

Actionair has always been at the forefront in the innovative development, design and manufacture of life safety dampers and associated controls. Now with the unique Smoke/Shield PTC™ range of Automatic Smoke and Fire Dampers Actionair continues this tradition.

The Range

The Smoke/Shield PTC™ range of Quality Engineered Dampers are suitable for air conditioning and ventilation systems requiring up to 4 hour smoke and fire protection.

These aerodynamic stainless steel interlocking opposed blade dampers are fail-safe spring close with manual or electrical reset control modes.

The Vent/Shield PTC™ Damper range are reverse acting for smoke release or exhaust. (Manual system not available).

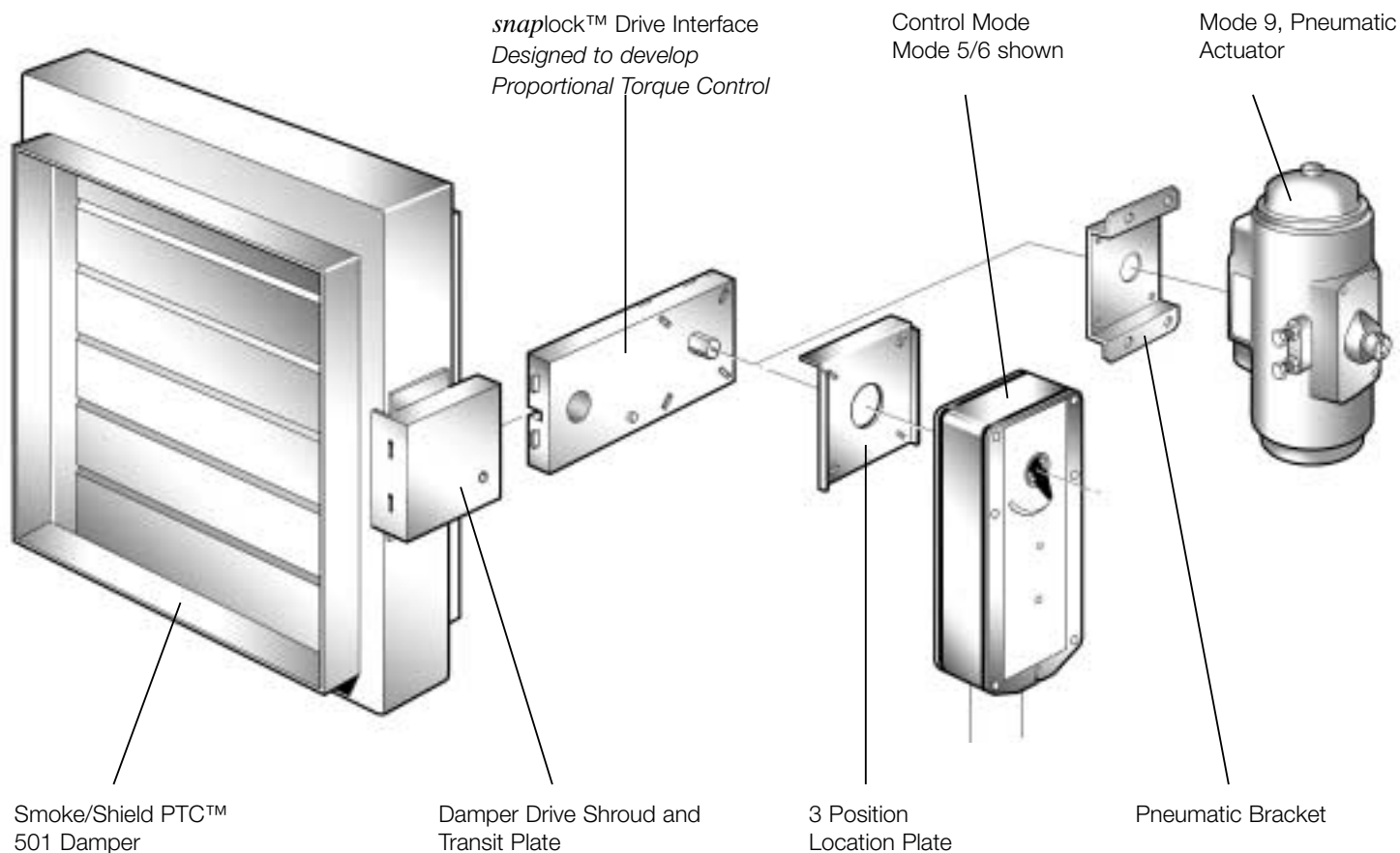
Proportional Torque Control

The control mode and *snaplock*™ drive interface provides the optimum mechanical advantage to the damper by delivering

the right torque, in the right place, at the right time.

Damper – Control Mode Interface

(Right Hand Damper shown)



Smoke/Shield PTC™ Damper with unique *snaplock*™ Damper/Control Mode Interface

Automatic Smoke and Fire Damper and Control Mode assembly with a unique and dedicated Proportional Torque Control for optimised Damper/Control Mode torque performance.

The unique *snaplock*™ 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.

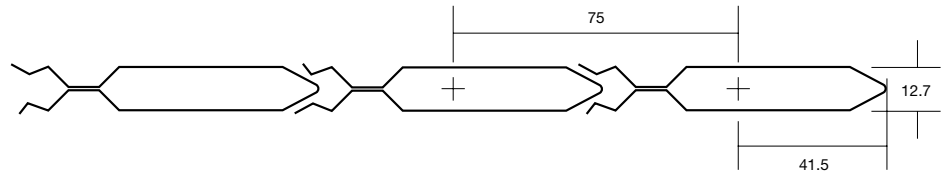
Blade Features

Smoke/Shield 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.

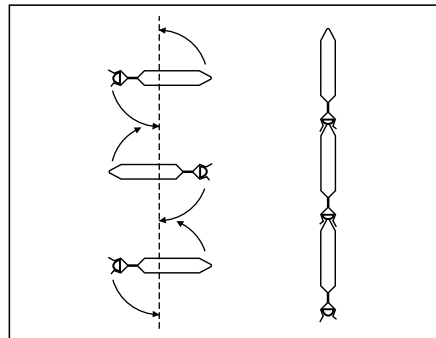
Incorporated within the blade profile is a synthetic seal to ensure low closed blade smoke leakage.

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

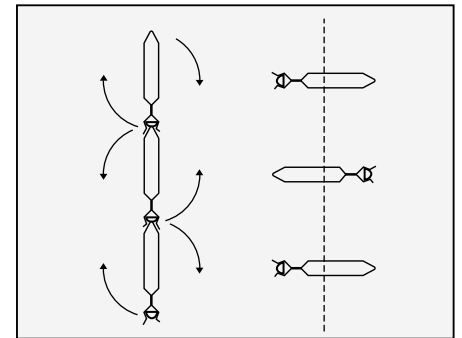
Optional Blade construction type 1.4401 (316) Austenitic Stainless Steel.



Smoke/Shield PTC™ blade dimensions



Smoke/Shield PTC™ fail-safe closed



Vent/Shield PTC™ fail-safe open

Control Options

A choice of four Control Modes are located outside of the ductwork for easy access and installation.

The motorised Control Modes 5 and 6 can be fitted in 3 positions through 180° (see page 7) allowing maximum on-site installation flexibility.

All Smoke/Shield Control Modes must be in the released position prior to connection.

Control Mode 1

Manual reset – with volt free contact for provision of external indication of damper status. **Not available on Vent/Shield.**

Note: Vent/Shield PTC™ Dampers and associated control modes are reverse action with spring opening (Mode 1 not available).

Control Modes 5 and 6

Optimised motor/spring return control modes with remote reset-release facilities, 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.

Control Mode 9

Pneumatic

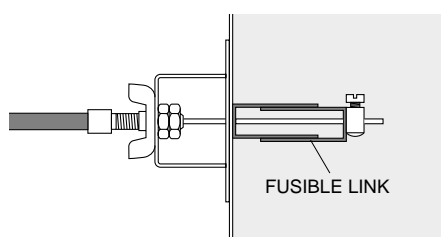
Mechanical Fusible Link

Control Mode 1

(Smoke/Shield only) Fail-safe by means of a unique and patented mechanical fusible link which operates at approx. 72 °C, complying with BS5588 Part 9: 1999.

The link assembly incorporates a safety feature that ensures the fail safe status of the damper if the link is not fitted on to the ductwork.

A manual test may be performed by simple unscrewing the wing nut situated on the fusible link.



Electrical Thermal Release (ETR)

Control Modes 5 and 6

Fail-safe by means of a unique and patented electrical thermal release which operates at 72 °C or if power supply is interrupted, complying with BS 5588 Part 9: 1999.

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/PTR is designed to operate once only when the activation temperature is reached.

Pneumatic Thermal Release (PTR)

Control Mode 9

Fail-safe is by means of a Pneumatic Thermal Release (PTR) which operates at 74 °C, or if air supply is interrupted.



Casings Features

With double skin spigotted galvanised steel (to BS EN 10327) 1.2mm thick casing the Smoke/Shield PTC™ 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.

Damper casings are manufactured with fully welded spigotted connections suitable for Square, Rectangular, Circular and Flat Oval duct connections.

As an extra cost option, casings can be manufactured in Type 1.4016 (430) Ferritic or Type 1.4401 (316) Austenitic Stainless Steel, 1.2mm thick.

Application Parameters

Smoke/Shield PTC™ and Vent/Shield PTC™ Dampers to maximum width and height dimensions (see page 10 and 11) can be used where the operating total

system pressure is up to 1500 Pascals and duct velocities to 15m/second.

The Smoke/Shield PTC™ Damper blades are normally open and fail-safe to the closed position. This product is fire rated.

The Vent/Shield PTC™ Damper blades are normally closed and fail-safe to the open position for smoke release or exhaust.

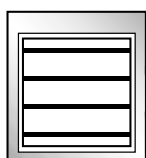
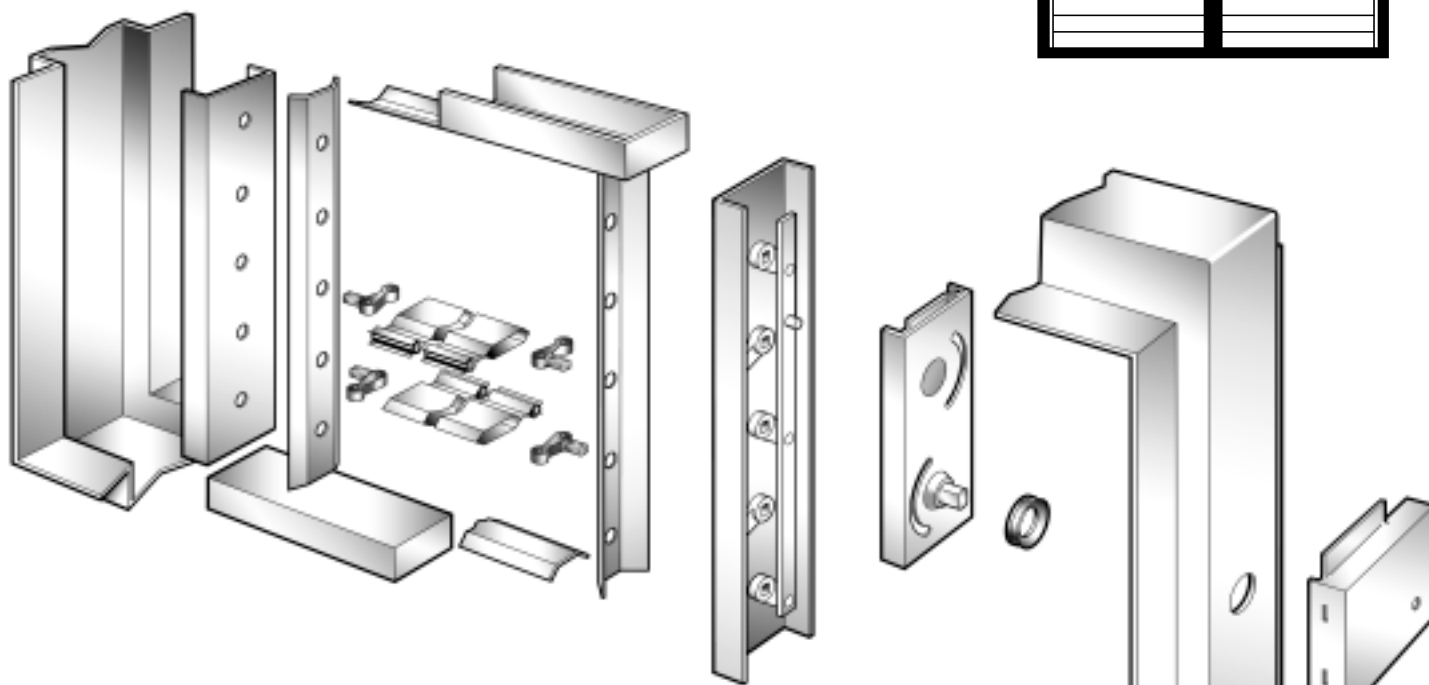
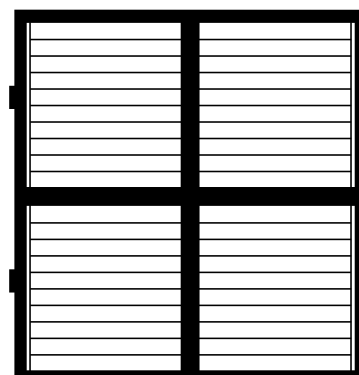
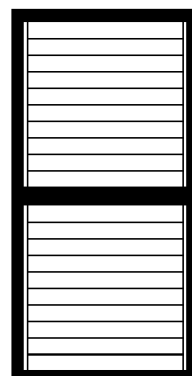
Dampers may be installed both vertically and horizontally. In addition, for vertical installations, the damper may be installed with the blades running vertically. Airflow can be from either direction.

Actionair Smoke/Shield PTC™ and Vent/Shield 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.

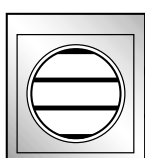
For specialist and/or aggressive applications, please refer to Actionair Sales Office.

Multiple Assemblies

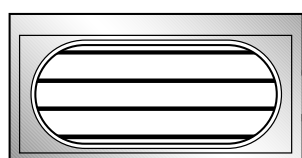
Square and rectangular casings are available in multiple module arrangements supplied complete with blanking strips for site fixing by others.



Type SPG
Square / Rectangular



Type SPG
Circular



Type SPG
Flat Oval

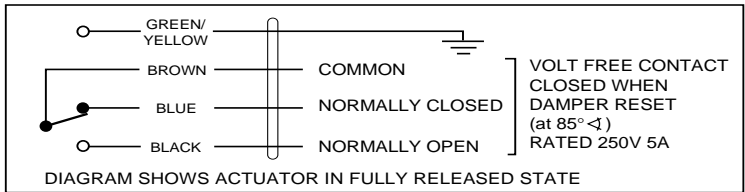
Application and Wiring

Vent/Shield PTC™ Dampers and associated Control Modes M5 & M6 are reverse action with spring opening.

Mode 1 PTC (Manual System)

Manual opening.
Spring instant closure via mechanical fusible link.

(Smoke/Shield version only, Vent/Shield not available.)



Mode 5 PTC (24V System)

The following applies for ETR version.

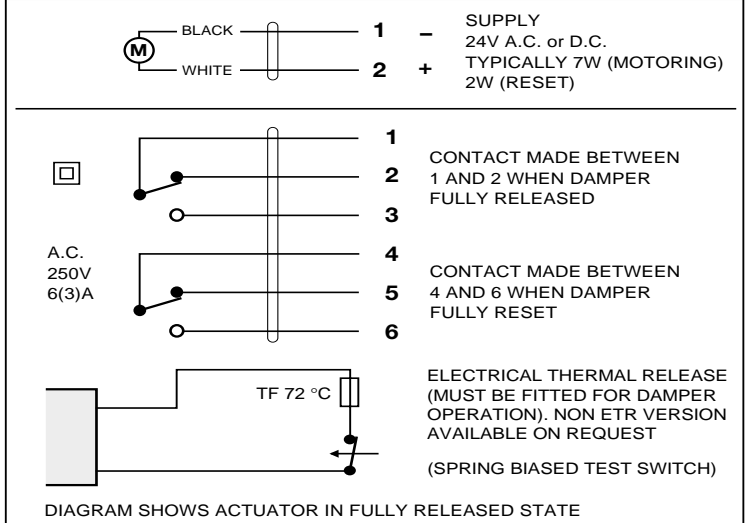
Power On – Damper motors open.
Power Off – Spring closure.
Electrical Thermal Release.
External mechanical position indicator with pointer.
Release Time ≈ 16 secs.
Reset Time ≈ 140 secs.

(Connect 24V via a safety isolating transformer.)

**A.C./D.C. 24V
50 / 60 Hz**

**10 V A
7/2 W**

**-30...+50 °C
CONTINUOUS**



Mode 6 PTC (230V System)

The following applies for ETR version.

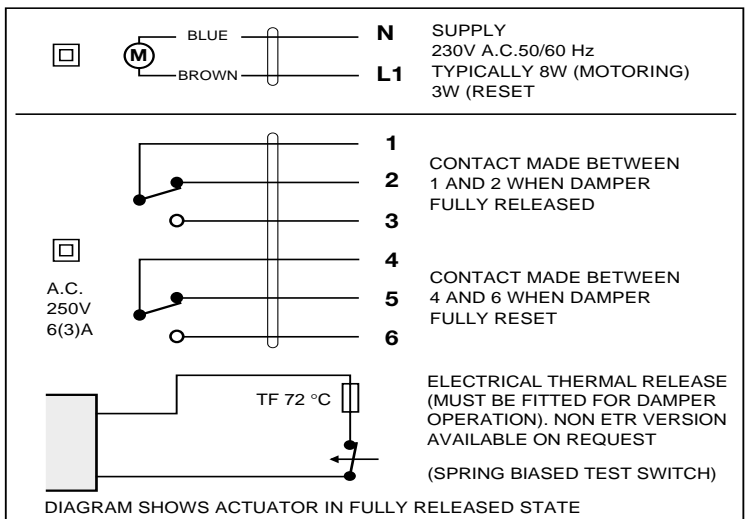
Power On – Damper motors open.
Power Off – Spring closure.
Electrical Thermal Release.
External mechanical position indicator with pointer.
Release Time ≈ 16 secs.
Reset Time ≈ 140 secs.

(To isolate from main power supply, the system must incorporate a device which disconnects the phase conductors, with a least 3mm contact gap.)

**A.C. 230V
50 / 60 Hz**

**12.5 V A
8 / 3 W**

**-30...+50 °C
CONTINUOUS**



Mode 9 PTC (Pneumatic Operation)

Air On – Damper opens.
Air Off – Spring closure.
Release time ≈ 2 – 4 secs.
Reset time ≈ 2 – 4 secs.
Air inlet – 6mm dia. quick fit coupling.
74 °C Pneumatic Thermal Link (PTR)
Air pressure ≈ 5.5 – 8.0 bar.

Air consumption to reset @ 5.5 – 8.0 bar.
Air consumption to reset @ 5.5 bar – 535CC.
External mechanical position indicator.
Test operation by removing fusible link element.

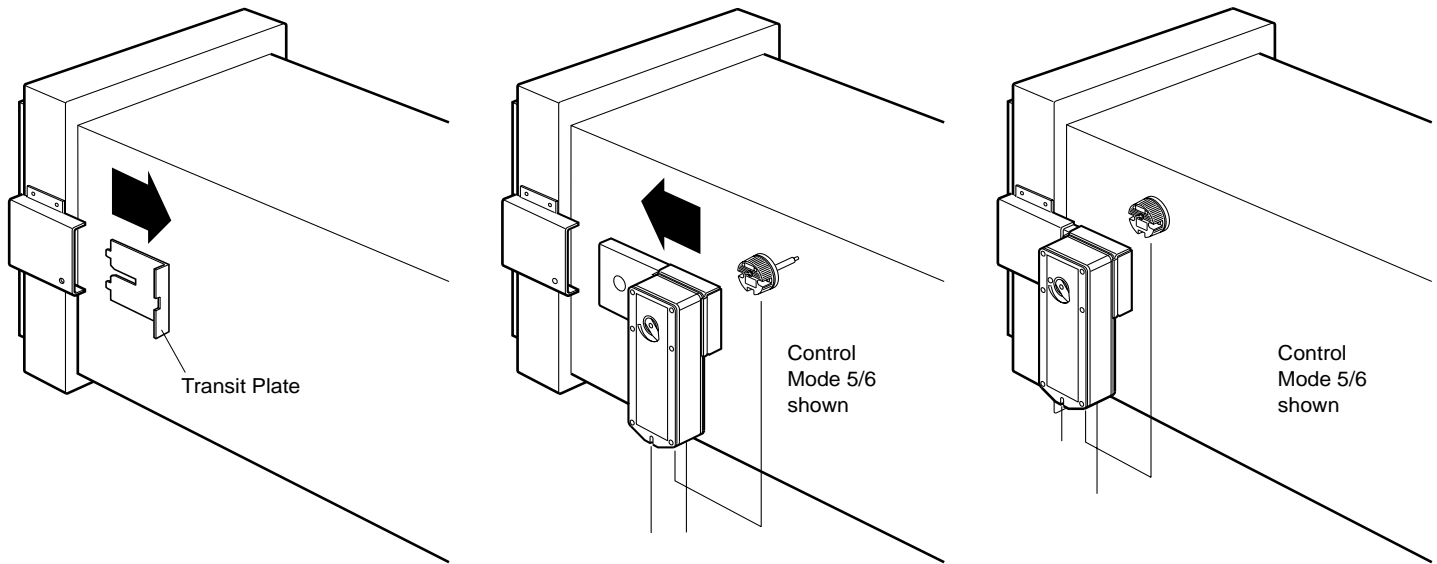
General (Electrical)

One metre of halogen free low smoke and fume electric cable is also included with Control Modes 1, 5 and 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.

The Electrical Thermal Release is pre-wired with 0.5m halogen free low smoke and fume cabling to Control Modes 5 and 6.
A Manual test switch fitted on the ETR allows periodic operation of damper simulating actual fail-safe release under smoke/fire conditions.

(Prewired Connection boxes available as factory fitted option.)
Control Modes 5 and 6 are available without the ETR where thermal operation is not required. (This would not comply with BS 5588 Part 9 on Smoke/Shield.)

Damper Installation and Control Mode Fitting



Step 1

Install the Smoke/Shield PTC™ Automatic Smoke and Fire Damper (complete with factory fitted damper drive shroud and transit plate) into the structure, connect and fit standard ductwork to damper spigots. Remove transit plate and discard. (Care must be taken when back filling to ensure that the *snaplock™* retaining pin location hole and the entry slot of the damper drive shroud is clear of builders work debris).

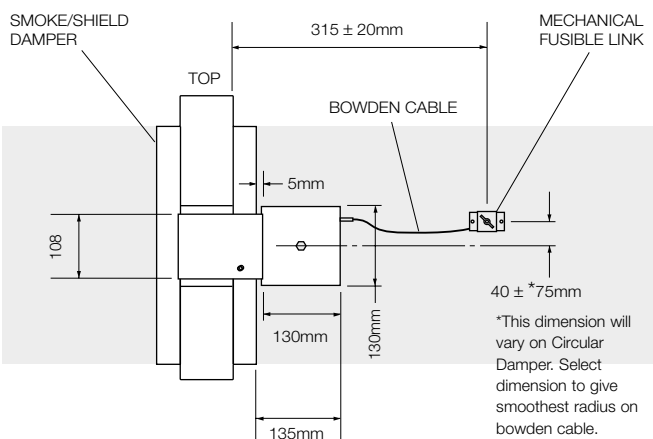
Step 2

Slide the *snaplock™* Drive Interface into the damper drive shroud, '*snaplock™*' into position, The '*snaplock™*' feature provides a user friendly, easy and secure direct connection. It comes pre-set to enable direct fit to Smoke/Vent/Shield damper.

Step 3 (Control Modes 5 and 6)

Identify location for the Electrical 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 2 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.**
Note: Non ETR version available.

Step 3 (Control Mode 1)

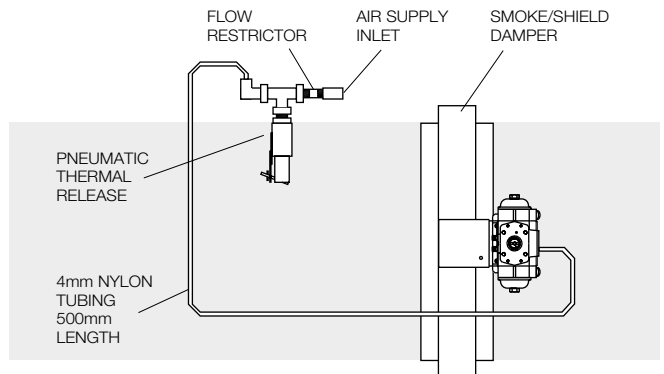


Mark the Fusible Link position on the duct as dimensioned in the left hand diagram.

Fit the self adhesive drilling template (supplied) in this position. Drill holes as detailed on template. Using the 2 fixing screws provided, secure the Fusible Link to the duct. Reset Damper using a 14mm A/F spanner, clockwise 1/4 turn. Test unit by simply unscrewing wing nut – Damper releases. For ductless installations a suitable sized plate or bracket must be fitted to the installation to allow the fitting of the Fusible Link.

As a safety feature the Control Mode will only operate if the Fusible Link is correctly fitted to the duct.

Step 3 (Control Mode 9)

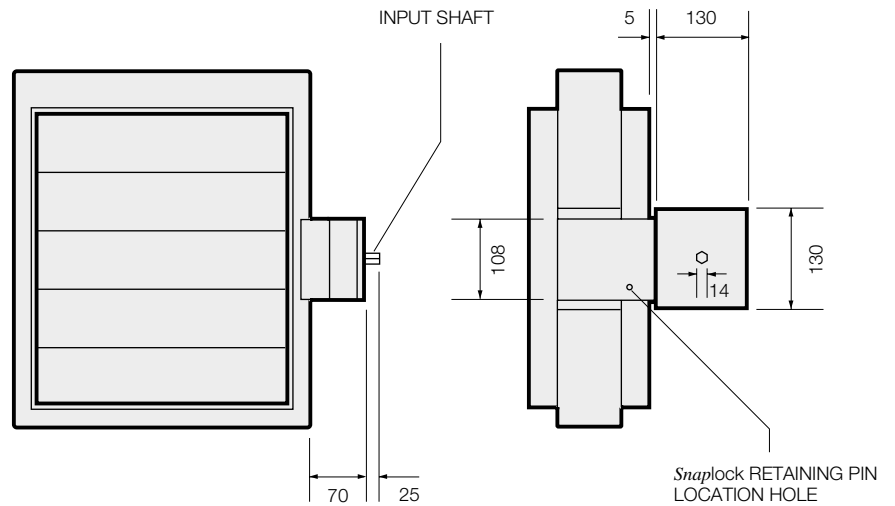


1. Select position for PTR. Ideally this should be in the top half of the duct and sufficiently close to the actuator to allow easy connection of the 4mm diameter nylon tube supplied.
2. Drill hole in selected position using a 30mm diameter hole cutter, removing any sharp edges.
3. Position PTR and drill the 4 off 3mm diameter fixing holes.
4. Remove PTR and apply approved fire retardant sealant on the duct around the hole.
5. Refit PTR and secure with the 4 off Pozi head screws provided.
6. Connect 4mm diameter tube to actuator and PTR.
7. Connect 6mm diameter tube to input side of PTR.
8. Connect air supply. Damper opens fully.
9. Test operation.

Control Mode Dimensions and Orientation

Mode 1 (Smoke/Shield only)

Smoke/Shield PTC™ Control Modes are located outside of the ductwork for ease of access and installation.



Modes 5 and 6 Three position 180° (Pivotable Control Mode)

Smoke/Shield PTC™ Control Modes are located outside of the ductwork for ease of access and installation.

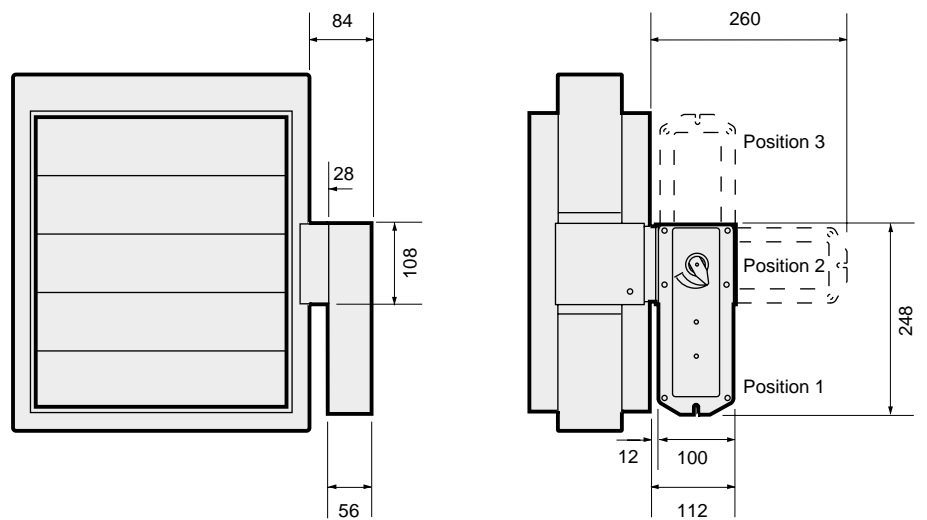
Control Modes 5 and 6 can be fitted in any one of three orientations i.e.

Vertically down (Position 1)
Horizontally (Position 2), or
Vertically up (Position 3).

This can be simply and easily carried out on site, by repositioning the Location Plate (see page 2) and Control Mode on to the *snaplock™* Drive Interface.

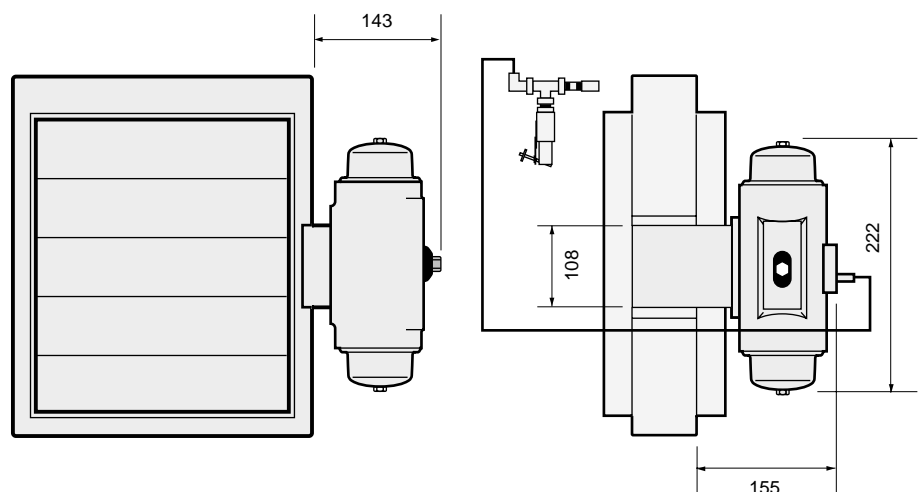
This flexibility ensures that the damper and control mode require the minimal amount of room.

(Supplied in position 2 as standard.)



Mode 9 Pneumatic Control

Smoke/Shield PTC™ Control Modes are located outside of the ductwork for ease of access and installation.



Accessories (Installation)

Galvanised Steel Installation Frames

(as required by HVC 6/5/83 Rev.1 July 1999.)

Installation frames are delivered to site as a complete assembly with the appropriate Fire/Shield Damper fitted therein. The frame shall be installed centrally in the thickness of a brick, blockwork or concrete surrounding wall or floor, or in the case of thick walls or floors, so that the centre line of the frame is at least 50mm away from the nearest face of the wall or floor in which the assembly is mounted. **The four tabs (building tie) forming each fixing point shall provide a positive fixing into the structure.** Multiple assembly dampers up to 1500 x 1500 or 2000 x 1000 can be fitted into fully assembled installation frames and delivered as one piece. Dampers in excess of this size will be supplied in sections with the installation frame supplied in kit-form, AAF Drg.8057. A drawing and method statement will be supplied for the assembly to be fitted on site.

The maximum size of kit-form installation frames will be to accommodate a four section assembly.

a. In brick or blockwork walls the tabs shall be bent out and solidly built into the mortar joints between the brick or blockwork.

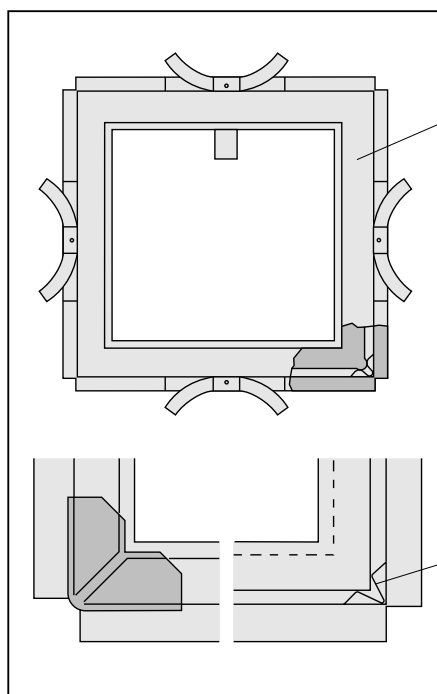
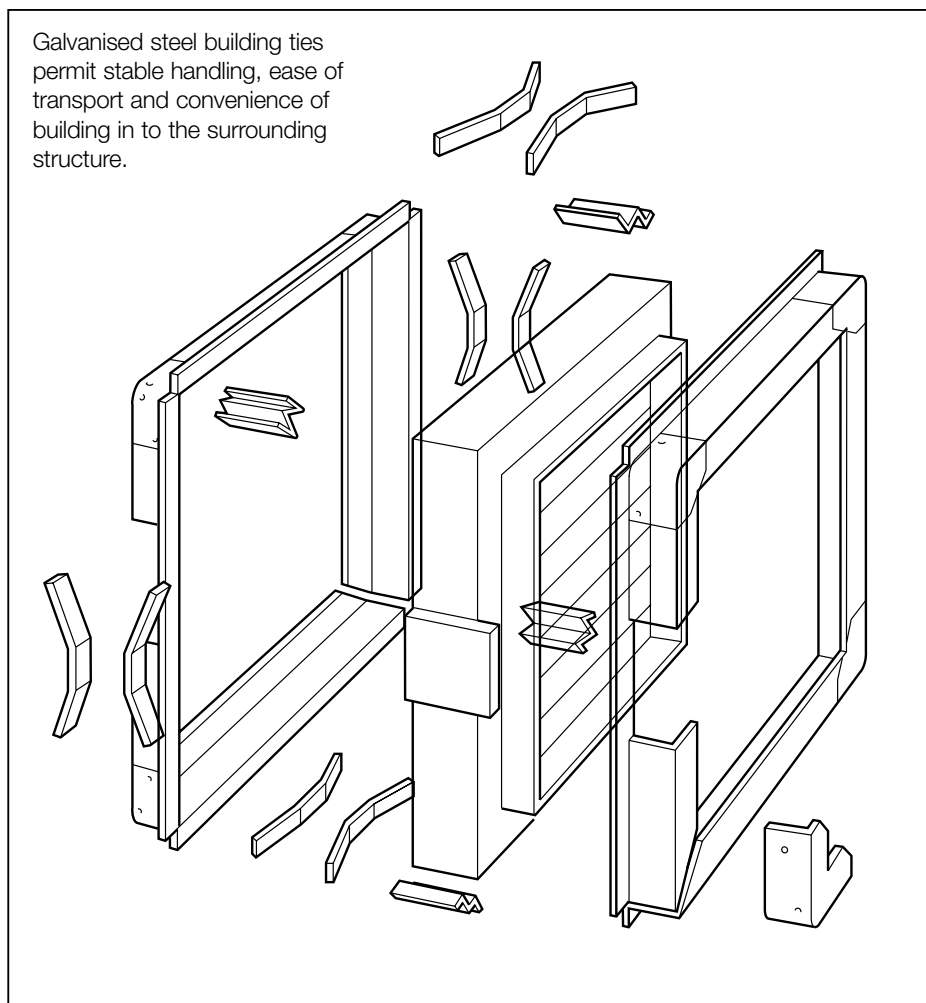
b. In the case of reinforced concrete walls and floors, the tabs shall be bent out and tied with wire to the reinforcing bars which will be deliberately left protruding into the opening.

The gap between the installation frame and builders work shall be backfilled with mortar or concrete on both sides of the flange.

Adjacent frame assemblies must be separated by builders work of a minimum thickness of 225mm (between installation frame upstand flanges) unless approval has been previously obtained from the appropriate Authority. For installations below this dimension please refer to Actionair Sales office.

In no case shall the HEVAC/HVCA frame and damper assembly be held in position merely by the adjacent ductwork, and it should be noted that in reinforced concrete structures (especially floors), it will not be sufficient to only backfill between the damper installation frame and the surrounding opening with mortar or fine aggregate concrete mix without provision for tying in the frame to the surrounding reinforced concrete structure.

Galvanised steel building ties permit stable handling, ease of transport and convenience of building in to the surrounding structure.



Galvanised steel frame, the corners left open with predetermined clearance space to permit the expansion of the complete assembly in a fire condition. Pressed steel corner brackets retain frame open corners in such a manner that all corners maintain their integrity against the passage of smoke or flame between the frame and the damper casing.

Aluminium rivets fix the pressed steel corner brackets to the frame and collapse in a fire situation to allow internal expansion of the installation frame.

Galvanised steel spacer sections located at each corner maintain clearance between frame and damper casing to permit the expansion of the latter in a fire condition.

All Fire Damper installations require relevant Local Authority approval.

Approved Illustrations

A binder containing approved installation illustrations is now available.

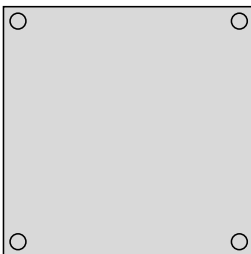
(Refer to Actionair Sales Office or visit our website, www.actionair.co.uk. The illustrations are under the heading **PRODUCTS DRAWINGS.**)

Although the included methods have been tested and assessed, it is recommended, that these, as with all installation methods must be confirmed with Building Control / Local Authority prior to manufacture. Actionair can also provide applications of other proposed methods of installation, please contact our Sales Office to discuss your specific requirements.

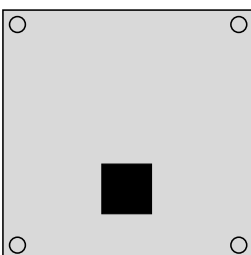
These again are the responsibility of the client to ensure that these are acceptable to Building Control / Local Authority before construction commences.



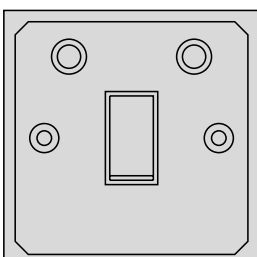
Electrical Accessories



CB
Connection Box For Control Modes.



PBOB
Push Button Operator Box
For Control Modes. (Illuminated switch to reset and release damper.)



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

Weights

Smoke/Vent/Shield PTC™
Approximate Weights (Kg)

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

Control Mode 1 (Smoke/Shield only)
(including drive interface) 4.1Kg

Control Modes 5, 6 and 9
(including drive interface) 4.4Kg

Dimensional Data

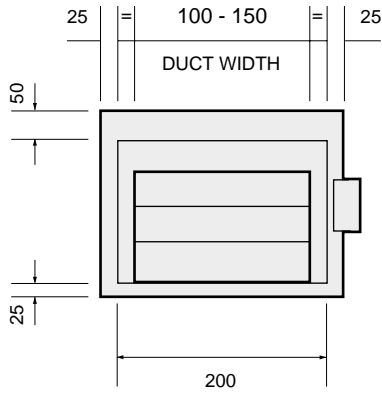
For Rectangular Dampers spigots are 5mm under duct size.

(For further details please refer to Actionair Sales Office.)

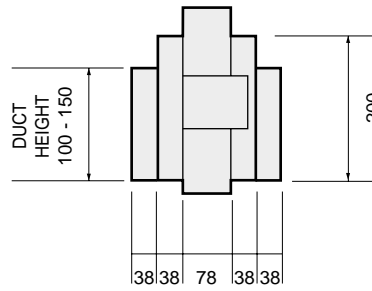
Basic Dampers

Rectangular Dampers Series 501 and 1501

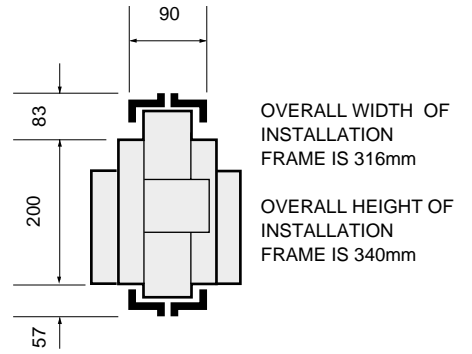
For Ducts with widths of 100 – 150mm



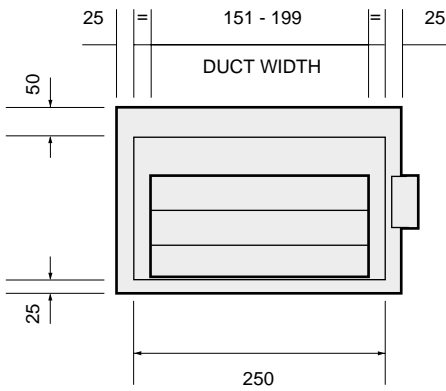
For Ducts with heights of 100 – 150mm



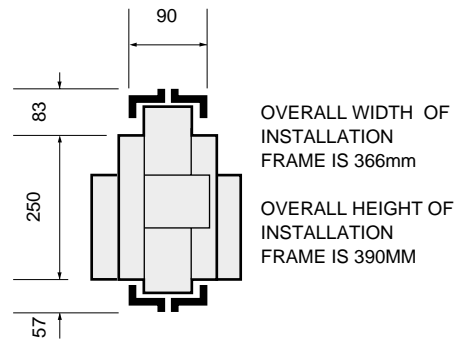
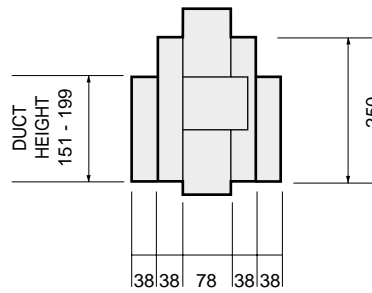
Dampers with Installation Frames



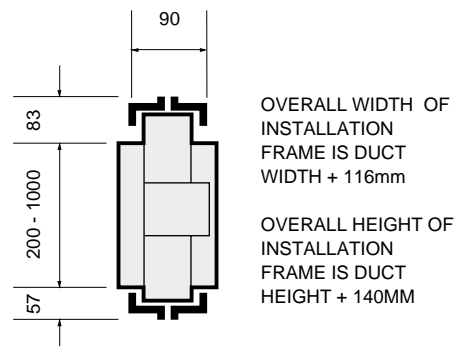
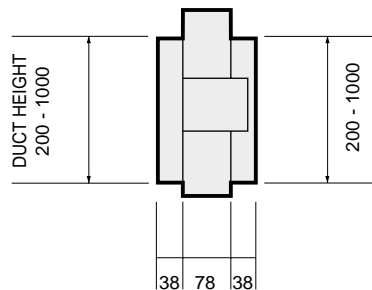
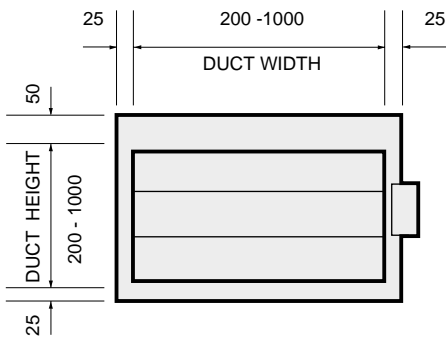
For Ducts with widths of 151 – 199mm



For Ducts with heights of 151 – 199mm



For Ducts with widths and heights of 200 – 1000mm

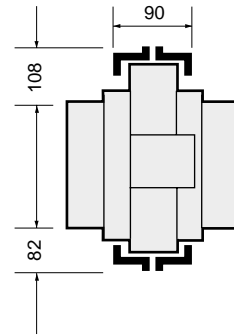
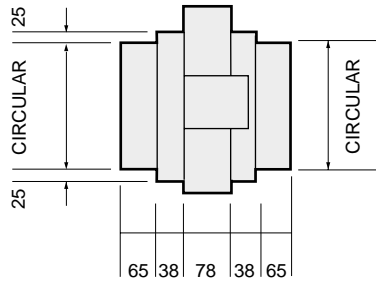
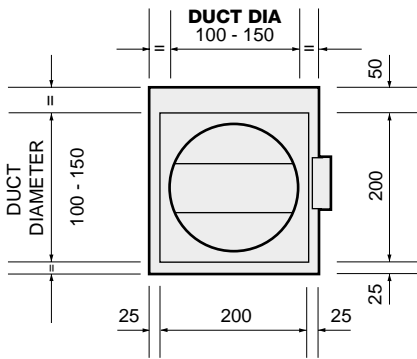


For Circular and Flat Oval Dampers spigots are 3mm under duct size.

(For further details please refer to Actionair Sales Office.)

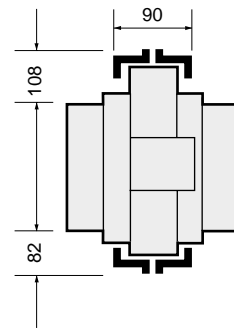
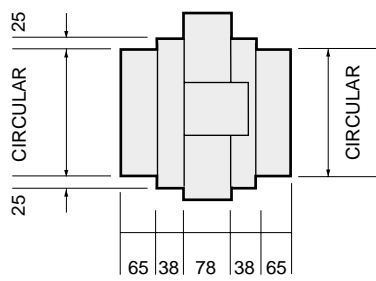
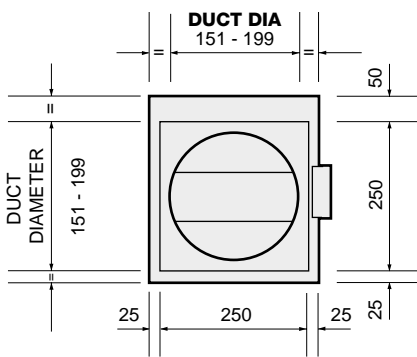
Basic Dampers

Circular Dampers Series 601 and 1601



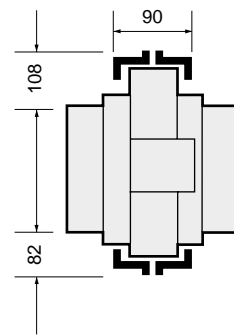
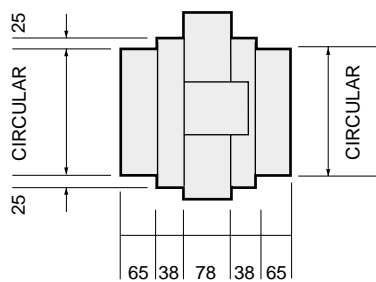
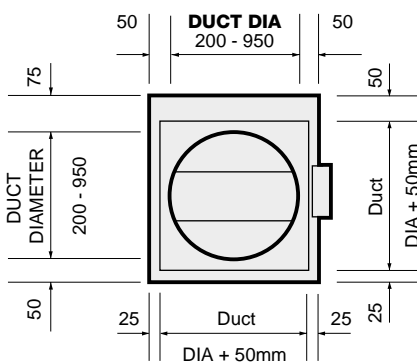
OVERALL WIDTH OF INSTALLATION FRAME IS 316mm

OVERALL HEIGHT OF INSTALLATION FRAME IS 340mm



OVERALL WIDTH OF INSTALLATION FRAME IS 366mm

OVERALL HEIGHT OF INSTALLATION FRAME IS 390mm

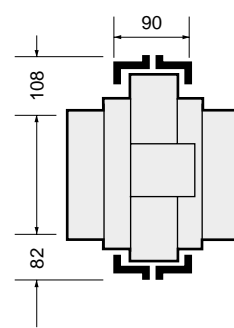
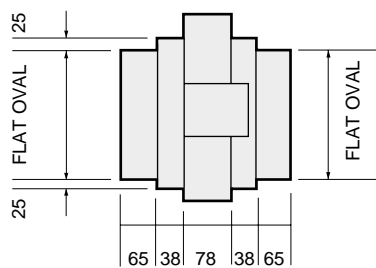
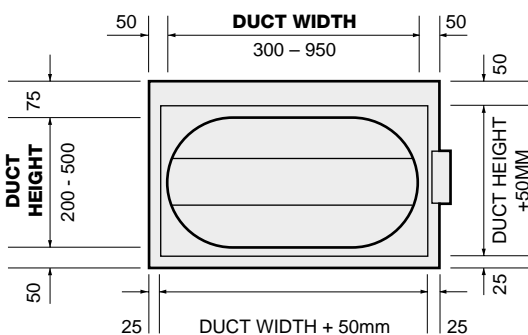


OVERALL WIDTH OF INSTALLATION FRAME IS DUCT DIA + 166mm

OVERALL HEIGHT OF INSTALLATION FRAME IS DUCT DIA + 190mm

FOR 951 – 1000mm REFER TO ACTIONAIR SALES OFFICE

Flat Oval Dampers Series 701 and 1701



OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 166mm

OVERALL HEIGHT OF INSTALLATION FRAME IS DUCT HEIGHT + 190mm

FOR 951 – 1000mm REFER TO ACTIONAIR SALES OFFICE

Acoustic Data

The data presented is from the Laboratory Determination of Acoustic and Aerodynamic Performance of Smoke/Shield PTC Automatic Smoke and Fire Control 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.

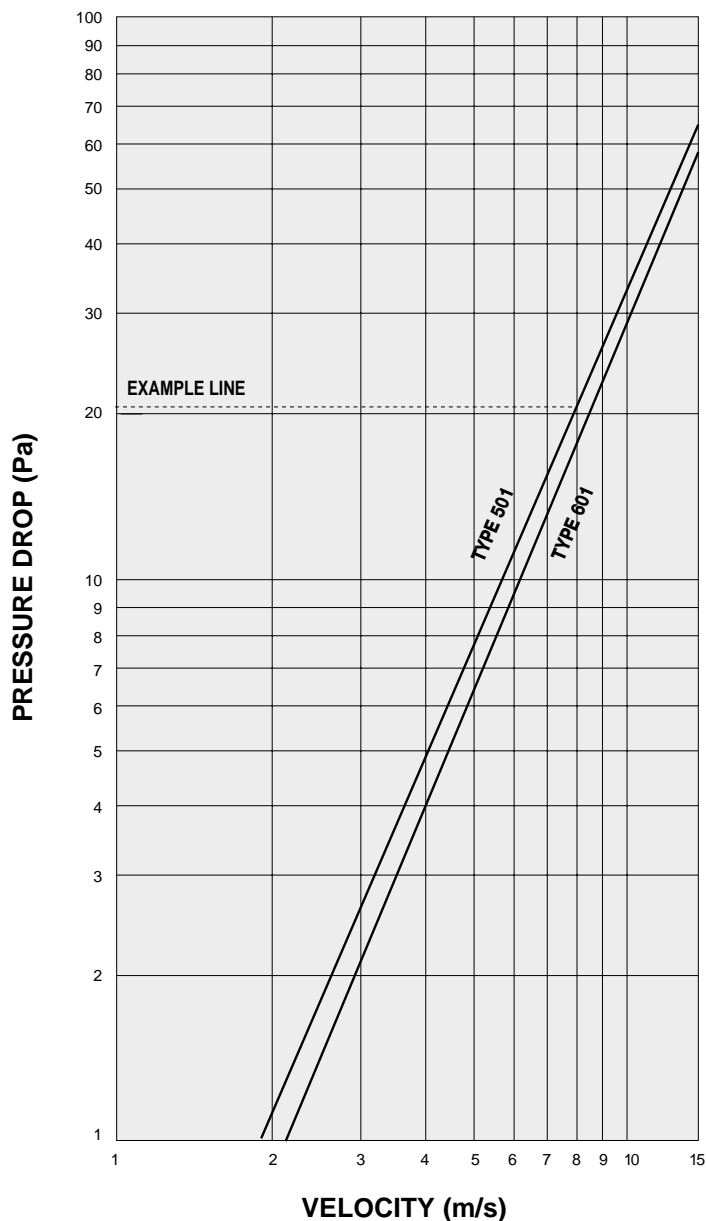
From the selection of a duct velocity within the operational parameters of the damper a resultant pressure drop from Graph 1 can be determined and the sum of these two components applied to the Velocity x Pressure Drop Vs Sound Power Level Graph. (Graph 2)

The graph is the result of a full range of acoustic tests on Smoke/Shield PTC™ Automatic Smoke and Fire Control 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. Smoke/Shield PTC Damper Series 501 fully open.

Pressure Drop = 21 Pa (Graph 1).

Multiply Velocity x Pressure Drop

$$8 \times 21 = 168.$$

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

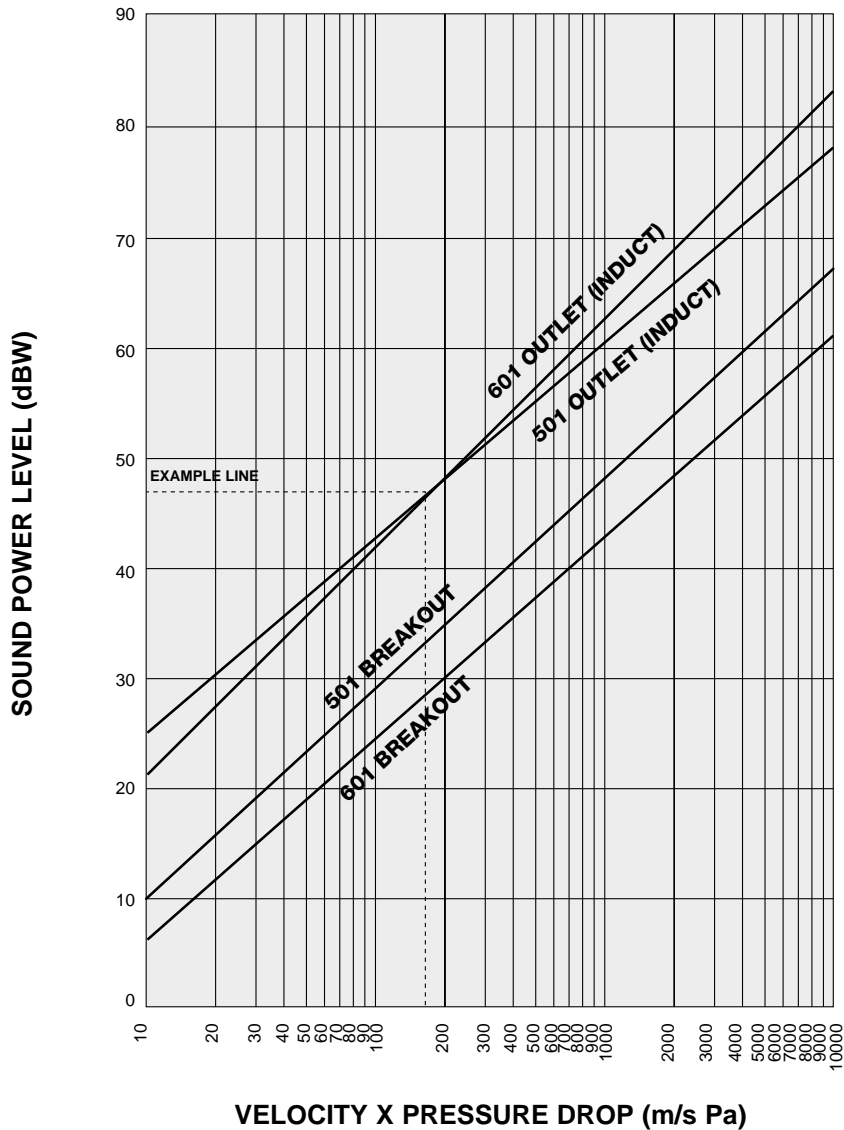


Table 1

Smoke/Shield 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

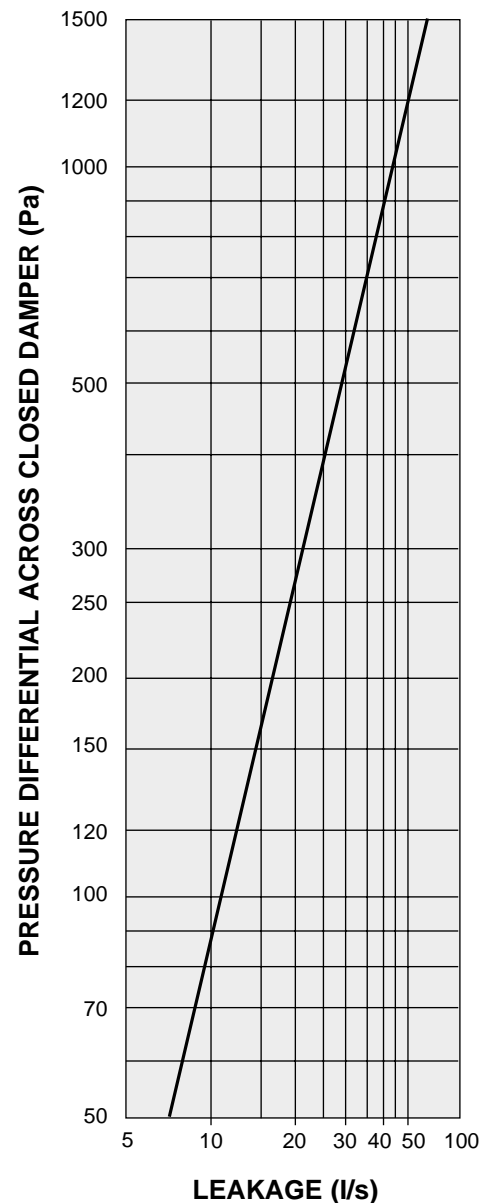
Smoke/Shield PTC™ Breakout Spectrum Corrections									
Octave Band	Hz	63	125	250	500	1k	2k	4k	8k
Series 501	dB	8	11	9	6	-3	-6	-14	-17
Series 601	dB	6	10	8	4	-3	-3	-11	-14

Damper Leakage

Graph 3

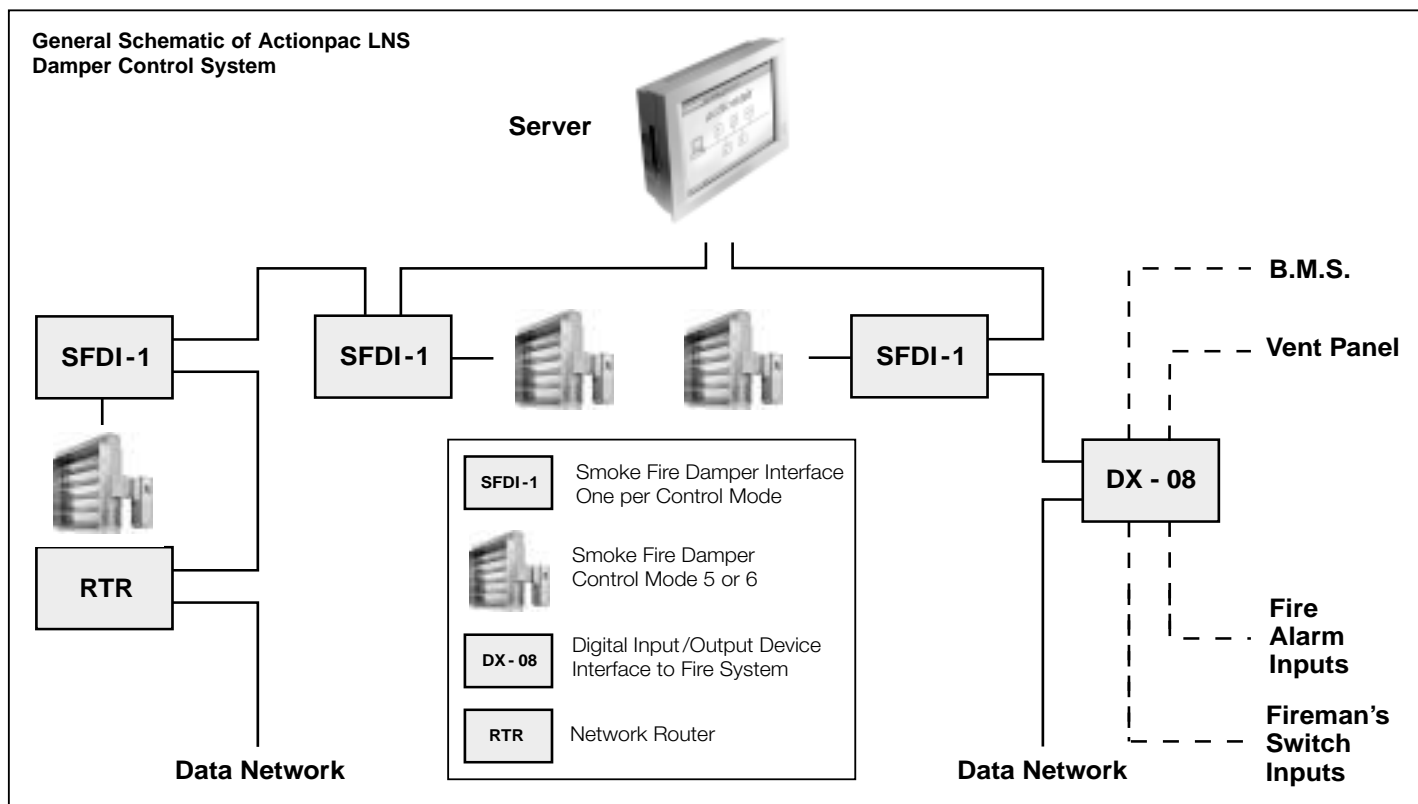
Smoke/Shield PTC™ and Vent/Shield PTC™ closed blade leakage as tested on a damper 1000mm wide x 1000mm high.

Leakage data at Ambient temperature (Cold Smoke).



The Smoke/Shield PTC™ Damper has been fire tested to BS ISO 10294-1 and BS EN 1366-2. It achieved ES classification in accordance with BS ISO 10294-2:1999. ES classification allows a maximum of 200m³/Hr/m² (corrected to 20 °C) hot gas leakage throughout the test at 300Pa pressure differential across the damper.

Actionpac Damper Control Systems



Actionpac LNS Damper Control System

The PC Driven damper control system is based on the LonWorks® Network Services of open interoperable systems, designed primarily with the system integrator/user in mind.

The LonMark® based system simplifies the installation and commissioning of Smoke and Fire Damper/Control Modes and periphery devices. The system will communicate and control an unlimited number of Smoke and Fire Control Modes, digital inputs and relay output devices.

Benefits

User friendly on screen help provided, no need for operating and maintenance manuals.

Automatic address assignment, no DIL switches.

Full diagnostic programme for system and device interrogation from Graphical User Interface.

Localised wiring to input/output devices, thus reducing wiring costs.

LonMark® 'Plug and Play' technology.

Industrial PC compatible.

Actionpac EMS (Standard and EMB (Bespoke) Electro-Mechanical Control and Monitoring Systems

EMS Actionpac (Standard)

The EMS Control Panels are of standard construction for the control and monitoring of Mode 5 or mode 6 damper actuators in groups of 12, 24 or 36.

EMB Actionpac (Bespoke)

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.

Detailed information available in separate Actionpac sales leaflet.

For further information and technical assistance please refer to Actionair Sales Office.



Specification

Smoke/Shield PTC™

Proportional Torque Control Automatic Smoke and Fire Dampers with 75mm x 0.5mm thick stainless steel aerodynamic interlocking blades incorporating synthetic seal, with steel blade end bearings and peripheral gasketing. Housed in a galvanised steel fully welded 1.2mm spigotted casing suitable for square, rectangular, circular or flat oval connections.

All PTC™ Dampers are supplied with the blades in the closed position to prevent the ingress of dirt and dust.

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 *snaplock*™ drive interface mechanism, which is totally independent of the ductwork.

Smoke/Shield PTC™ Automatic Smoke and Fire Dampers with their appropriate control modes shall have spring Fail-Safe Closed operation.

Smoke/Shield PTC™ Damper and selected Control Mode (M1, M5, M6 and M9) as supplied by Actionair.

Vent/Shield PTC™

Proportional Torque Control Automatic Smoke Release Dampers with 75mm x 0.5mm thick stainless steel aerodynamic blades incorporating synthetic seal, with steel blade end bearings and peripheral gasketing. Housed in a galvanised steel fully welded spigotted casing suitable for square, rectangular, circular or flat oval duct 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 *snaplock*™ drive interface mechanism, which is totally independent of the ductwork.

Vent/Shield PTC™ Automatic Smoke Release Dampers with their appropriate control modes shall have spring Fail-Safe Open operation.

Vent/Shield PTC™ Damper and selected Control Modes as supplied by Actionair.

Approvals

Approved by The Loss Prevention Council for use in up to 4 hour constructions.

The Smoke/Shield PTC™ Damper tested and assessed to BS ISO 10294-1, BS EN 1366-2 and BS 476 pt. 20. It achieved ES classification in accordance with BS ISO 10294-2:1999.

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.

Corrosion tested to LPS 1162.

Complies with the latest DW 144 casing leakage specification.

The Electrical Control Modes satisfy the requirements of EN 50081-1 and EN 50082-1 electro magnetic compatibility.

Smoke/Shield PTC™

A Fire Rated Damper in accordance with British Standard 5588: Part 9: 1999 should be held in the Open Position by means of a Thermally Actuated Device set to operate at approximately 74 °C.

Smoke/Shield PTC™ Automatic Smoke and Fire Control Dampers are Fire Rated Dampers as they are held in the Reset (Open) Position by a Thermally Actuated Device (Control Mode 1 – Mechanical Fusible Link, Control Modes 5 & 6 – Electrical Thermal Release – Mode 9 – Mechanical Fusible Link) operating at a temperature of approximately 72° C ± 4 °C.

Optional higher rated links are available, refer to Actionair Technical Sales Office.

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.

Maintenance

The Smoke/Shield PTC™ Dampers are designed for applications in normal dry filtered air systems and should be subjected to a planned inspection programme, with cleaning and light oil lubrication in accordance with good industry practice. When exposed to fresh air intakes and/or inclement conditions this may need to be performed more regularly based on experience gained from previous inspections.

The information contained herein is subject to change without notice due to continuing research and development.

Standard Ordering Procedure

Please specify

Series

SS501/PTC Smoke/Shield PTC™
Square or Rectangular
(Fail-safe closed).

SS601/PTC Smoke/Shield PTC™
Circular
(Fail-safe closed).

SS701/PTC Smoke/Shield PTC™
Flat Oval
(Fail-safe closed).

VS1501/PTC Vent/Shield PTC™
Square or Rectangular
(Fail-safe open).

VS 1601/PTC Vent/Shield PTC™
Circular
(Fail-safe open).

VS1701/PTC Vent/Shield PTC™
Flat Oval
(Fail-safe open).

Control Modes

Mode 1 Manual Reset
Manual opening and
spring instant closure.

Mode 5 Remote Reset
Electrical 24 Volt A.C. and D.C. opening
and spring closure.

Mode 6 Remote Reset
Electrical 230 Volt A.C. opening and
spring closure.

Mode 9 Remote Reset
Air on open, air off spring closure.

Mode 5 Remote Reset
Electrical 24 Volt A.C. and D.C. closure
and spring opening.

Mode 6 Remote Reset
Electrical 230 Volt A.C. closure and
spring opening.

Mode 9
Air on closure, air off spring opening.

Accessories (Installation)

IF Installation Frame.
(see page 8)

Accessories (Electrical)

CB Connection Box
For Control Modes 1, 5 & 6.
(see page 9)

PBOB Push Button Operator Box
For Control Modes 5 & 6.
(see page 9)

DTU Damper Test Unit
For Control Modes 5 & 6.
(see page 9)

Pneumatic

24 Volt Solenoid
Status Beacon

Actionpac Damper Control

Systems

(See page 14. Please refer to
Actionair Sales Office).

Example

3	/	SS501/PTC	/	IF	/	600(W) x 450(H)	/	M5
Quantity		Series		Accessories		Duct Size		Control Mode

actionair
no compromise...

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Email: sales@actionair.co.uk Website: www.actionair.co.uk

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