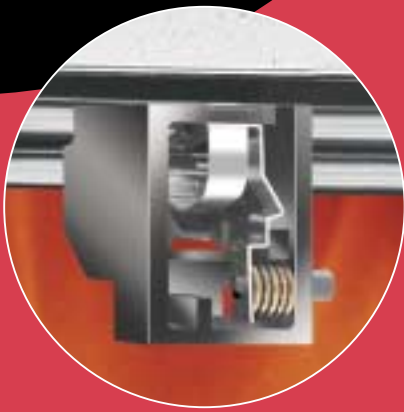


**Innovative cassette,
new design with
even easier single-
handed reset.**



Features and Design Guide

Damper tested by LPC/BRE up to 4 hour applications,

Product Certification Awarded by the Loss Prevention Certification Board Limited. (LPCB).

Tested to BS ISO 10294-1: 1996, BS EN 1366-2: 1999 and BS 476 Part 20: 1987 Fire Test Standards.

Corrosion tested.

New Self-Latching Removable Cassette, with even easier Single Handed Reset.

Stainless Steel folding curtain.

Choice of 230 Volt A.C. or 24 Volt A.C. and D.C. remote electro magnet fail-safe releases on cassette type options only.

Actionair Fire/Shield

Stainless Steel Bladed Curtain Fire Dampers



*action*air

The Range

The Fire/Shield range of quality engineered dampers are suitable for air conditioning and ventilation systems requiring up to 4 hour fire protection.

These stainless steel bladed Actionair Fire/Shield Dampers fail-safe closed and are supplied with the new innovative, even easier Single-Handed Reset Self Latching Removable Release Mechanism Cassette, which permits single handed reset.

Ordinary steel curtain fire dampers involve a complex pull and lift curtain opening operation, further complicated by having to hold the curtain in the fully open position against the constant tension of closure springs whilst attempting to reset or replace the fusible link unsighted.

Application Parameters

Fire/Shield Dampers are designed for application in normal dry filtered air systems. If exposed to fresh air intakes and/or inclement conditions the damper should be subject to a planned inspection programme.

Any specialists and/or aggressive applications (e.g. swimming pools) may invalidate our warranty, please refer to Actionair Sales Office.

Blade Features

The Type 1.4016 (430) Ferritic Stainless Steel folding blade curtain, providing maximum strength, form a fire shield. The wide profile blades maximise the damper free area and ensure compact grouping to minimise blade stacking height.

Optional blade construction Type 1.4401 (316) Austenitic Stainless Steel.

Side Seal Gasketing

Stainless Steel side seal gasketing provides constant pressure on blade edges, minimising the spread of smoke and other products of combustion.

Ordinary steel curtain fire dampers may not have side seal gasketing.

Stainless Steel Closure Springs

Stainless Steel constant tension springs are fitted and positioned out of the airstream to close and latch the damper, regardless of vertical or horizontal operation.

Spigotted Casing Features

The spigotted casing with continuously welded corners and spigot connections,

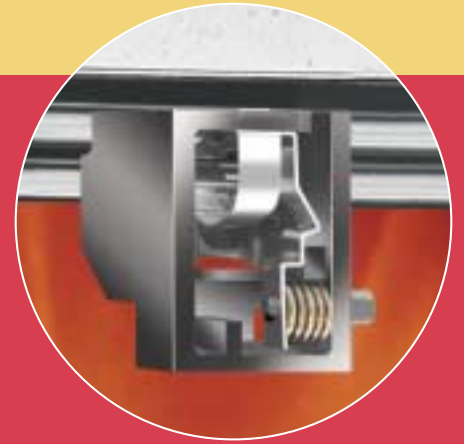
makes these dampers suitable for inclusion into air distribution systems to the test methods of Eurovent Class A, B & C and HVCA Ductwork specification DW144.

These galvanised casings are manufactured with either Square, Rectangular, Circular or Flat Oval duct connections.

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

Ordinary steel curtain fire dampers for low or medium velocity operation and having the blades and/or part of the casing frame in the airstream may not have casings of continuous welded airtight construction.

Innovative cassette,



Cassette Details

- Patented design.
- Made of Polyphenylenesulphide (PPS) resin reinforced with 40% glass (GF-PPS).
- Technically advanced engineering polymer.
- PPS is stable at temperatures up to 200 °C.
- Cassette construction is of very high strength and has excellent creep and fatigue resistance.
- Low smoke and toxic emissions in fire conditions.
- Halogen free
- PPS has a very low moisture absorption.
- PPS is corrosion resistant.
- The Cassette construction is environmentally friendly (recyclable material).
- The new Cassette is retrofittable to existing Fire/Shield Dampers (by use of a simple optional adaption bracket).
- One Cassette to suit all damper material options.

... new design with even easier single-handed reset

Self Latching Removable Release Mechanism Cassette

The cassette mechanism is completely removable from the Fire/Shield Damper by manually releasing the retaining clip. This allows replacement of the cassette without the use of tools.

Simple hand operation enables the damper curtain to be reset and latched in the fully Open Position. This increases the ease and speed with which the Fire/Shield Damper can be reset following periodic functional testing in accordance with British Standard BS 5588: Part 9 Code of Practice for Ventilation and Air Conditioning Ductwork.

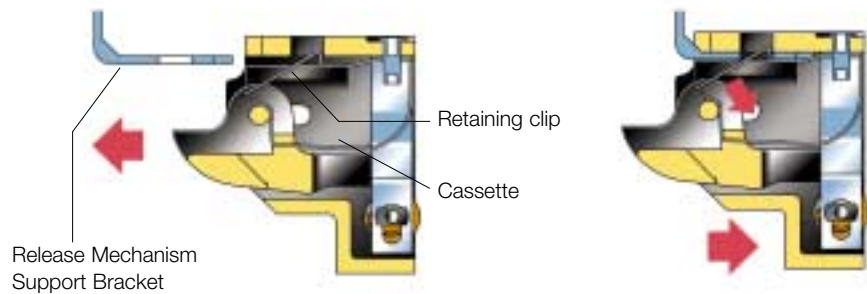
The thermal actuator in the form of a helical memory metal compression spring is produced from a special Cu-Zn-Al brass alloy.

On temperature rise this expands and at 72 °C, causes the Fire/Shield damper blades to release.

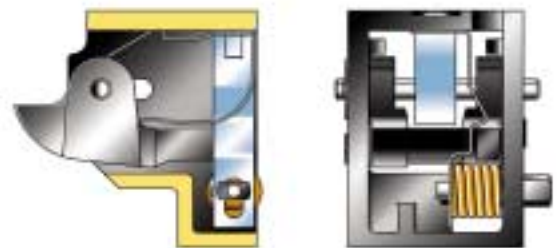
On cooling, the spring reverts to the close-coiled state offering the significant advantage of repeated operation, unless it has reached temperatures in excess of 170 °C, where it will remain extended, preventing reset.

Cassettes are only available for 72 °C. For Dampers where alternative thermal link temperatures are required a chain-link can be offered in place of a cassette. Electrical release is only available with a cassette i.e. 72 °C. Please refer to Actionair Sales Office.

Please note: For dampers with dimensions of 150mm and below ensure that there is adequate access to enable re-setting.



Set Position



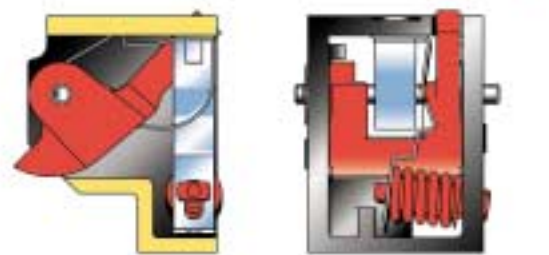
Manual Operation

Manual Operation for periodic functional testing in accordance with British Standard BS 5588: Part 9 Code of Practice for Ventilation and Air Conditioning Ductwork.



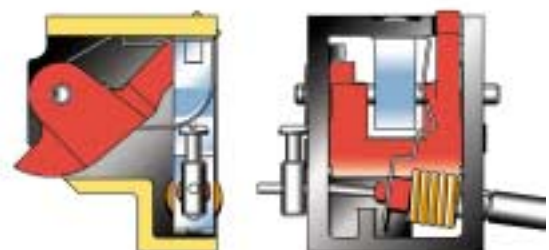
Thermal Actuator Operation

Memory metal coil springs, specially designed to fully expand at 72 °C and actuate damper closure.



Remote Release Operation

Remote release operation to close the Fire/Shield Damper is by Bowden cable with Manual action or Electrical 230V A.C. or 24V A.C. and D.C. Electro Magnet fail-safe action and independent of the thermal actuators.



Reset Operation

Single hand operation. Each blade pushes the latch back under spring tension. On full blade reset the latch springs out to secure.

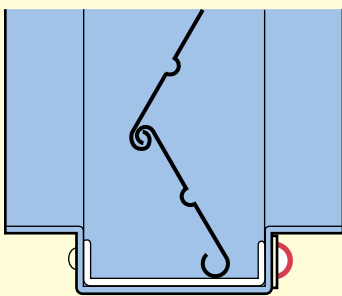
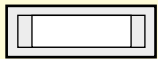
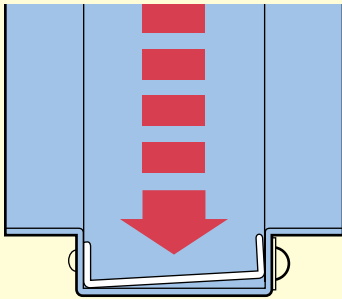


External Visual Blade Position Indication

An external indicator is factory fitted to the access (cassette) side of the damper casing giving visual indication of damper blade position.

A spring steel actuator ensures automatic resetting of the external indicator in either horizontal or vertical applications.

The external indicator is especially beneficial at the system balancing and commissioning stage eliminating the necessity of internal duct inspection to determine the fire damper open or closed position.



Fluorescent Red Display

Indicating damper blades in closed position.



Note: External visual blade position indication is not available with special finished casings, certain multiple assemblies, miscellaneous Damper configurations and due to physical size limitations is not available below 125mm dia. on Series 301 Dampers.

Accessories

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, 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. 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.

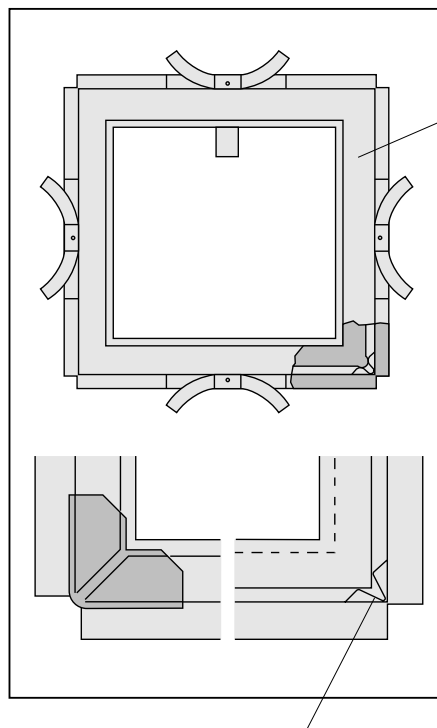
a. In brick or blockwork walls the tabs shall be bent out and solidly built into the mortar joints between the brick or blockwork.

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 solutions 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 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.

A binder containing certain approved installation illustrations is available, please contact the Sales Office or visit our website, www.actionair.co.uk. Although the included methods have been tested and assessed, it is recommend, 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.

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.

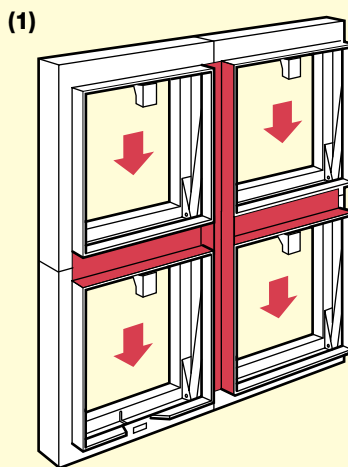
Multiple Assemblies

Square and rectangular casings are available in multiple module arrangements, supplied complete with connecting channels for site fixing by others.

Multiple Vertical Arrangement

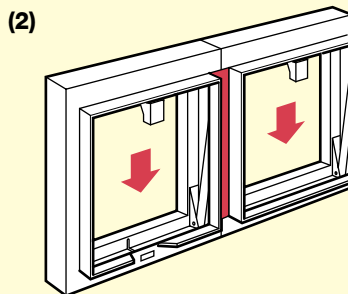
(1) Series 201 or 101 as required mounted on Series 101 can also be arranged 3 off dampers high to give maximum duct height of 3100mm. Duct width as required. Bottom dampers only provided with external visual indication of blade position.

Note: Should more than 3 off dampers high be required, adequate damper supports are necessary and must be provided. Please refer to Actionair Sales Office.



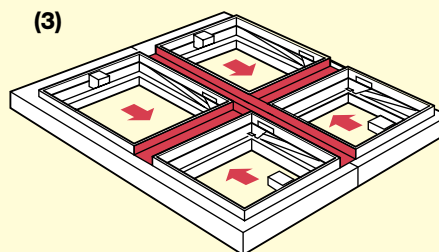
Multiple Vertical Arrangement

(2) Series 101 shown. Series 201 can be mounted similarly. Maximum duct height 1000mm. Maximum duct width as required. Horizontal arrangement similar. External visual indication of blade position provided with all dampers.



Multiple Horizontal Arrangement

(3) Series 201 shown. Series 101 can be mounted similarly, four or more sections. Maximum duct height 2050mm. External visual indication of damper blade position not relevant to this application.



Weights

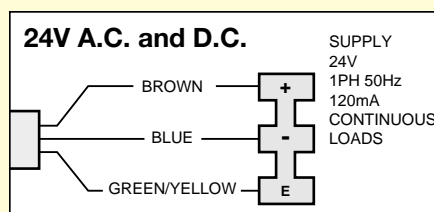
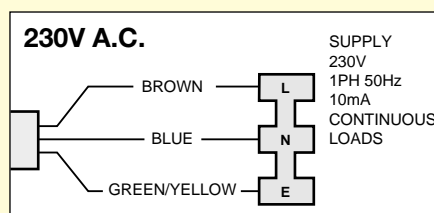
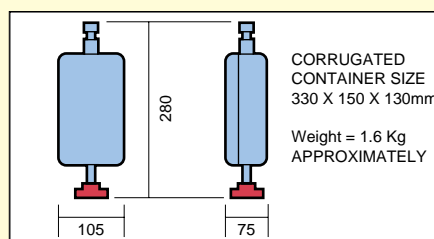
SQUARE/CIRCULAR DUCT SIZE (MM)	Approximate Weights (Kg)					
	SERIES 101	SERIES 101 +/F	SERIES 201	SERIES 201 +/F	SERIES 301	SERIES 301 +/F
100	1.6	3.8	Please use series 101 dampers for duct heights below 250mm	2.3	4.4	
150	2.1	4.6		3.0	5.5	
200	2.8	5.7		4.0	6.9	
250	3.5	6.8	4.1	7.4	5.4	9.0
300	4.2	8.0	4.6	8.5	6.5	10.4
350	5.0	9.2	5.4	9.6	7.6	11.7
400	5.7	10.7	6.0	10.4	8.8	13.6
450	6.9	11.8	7.1	12.6	10.2	15.5
500	7.5	12.9	8.0	13.8	11.7	16.5
550	8.6	14.1	9.3	15.3	13.2	18.5
600	9.5	15.8	10.5	16.8	14.9	20.3
650	10.9	17.9	12.1	18.0	16.9	22.2
700	12.0	19.1	12.7	20.3	18.7	24.5
750	13.1	20.2	14.4	21.7	20.5	27.8
800	13.8	21.3	16.0	23.6	22.4	30.4
850	15.2	23.3	17.5	25.5	24.5	32.8
900	16.7	25.2	19.0	27.6	26.7	35.2
950	18.1	27.4	20.5	29.8	28.8	38.9
1000	19.0	29.2	22.0	32.0	31.0	42.0

For Series 401 and Series 401 +/F please contact Actionair Sales Office.

Note: For Series 201 Multiple Height Arrangement specify Vertical or Horizontal application.

Remote Electrical Fail-Safe Releases

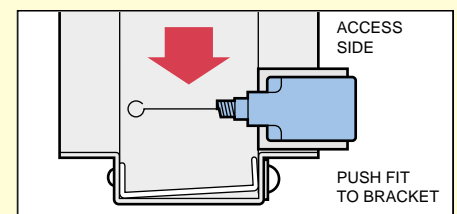
230 Volt A.C. and 24 Volt A.C. and D.C. Electro magnet releases are available, for use with cassette mechanisms only.



Terminal blocks supplied by others.

Micro Switches

All Series Fire/Shield Dampers are available with factory fitted single or double pole micro switches as optional extras to provide remote electrical indication of damper status and/or controls interface.

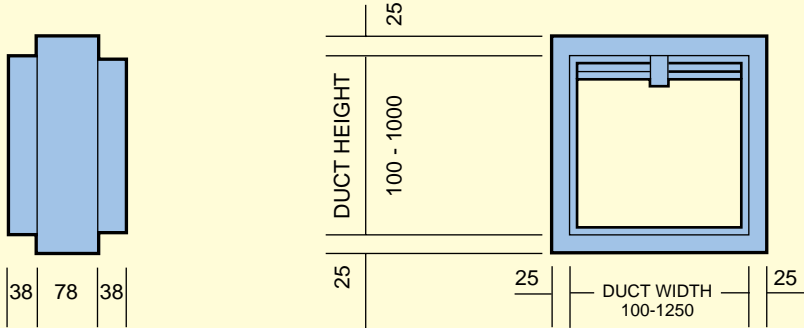


Note: For Dampers below 200 x 200mm or 200mm diameter micro switches will be factory fitted on the non access side.

Dimensional Data

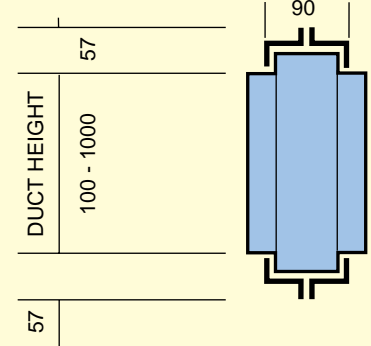
Basic Dampers

Series 101 Fire/Shield Dampers with blades partly in airstream
(Damper spigots 5mm under duct size)

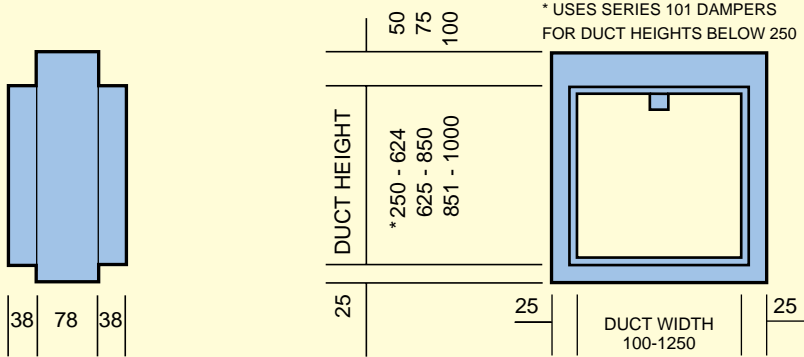


Dampers with Installation Frames

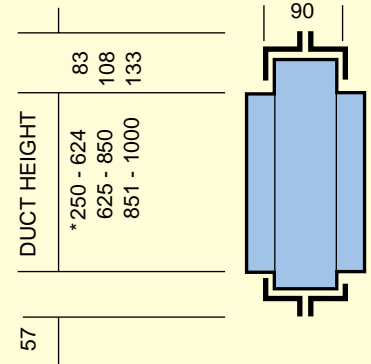
OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 114



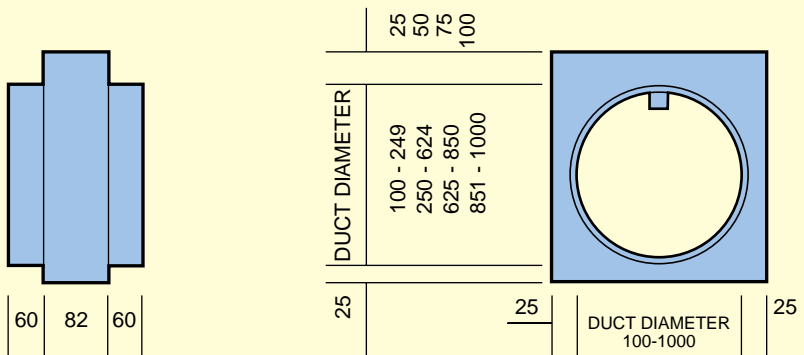
Series 201 Fire/Shield Dampers with blades effectively outside airstream
(Damper spigots 5mm under duct size)



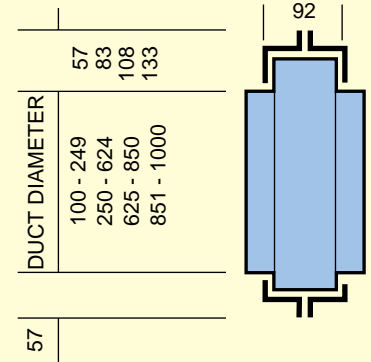
OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 114



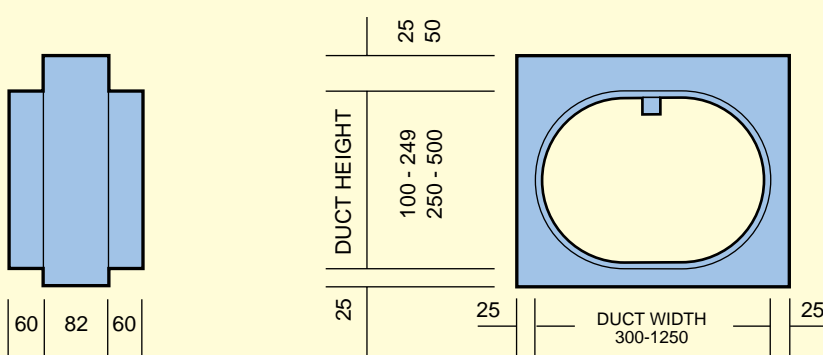
Series 301 Fire/Shield Dampers with blades effectively outside airstream
(Damper spigots 3mm under duct size)



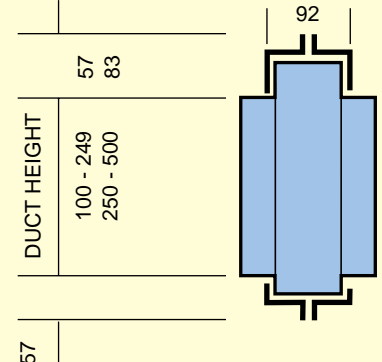
OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 114



Series 401 Fire/Shield Dampers with blades effectively outside airstream
(Damper spigots 3mm under duct size)



OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 114



Acoustic Data

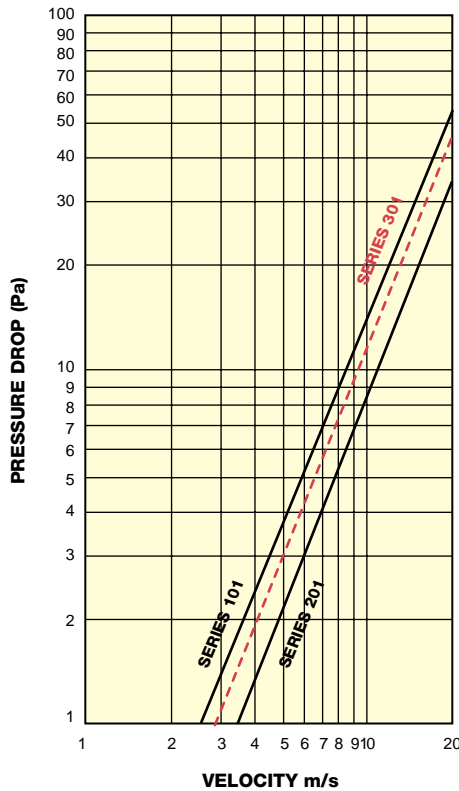
The data presented is from the Laboratory Determination of Acoustic and Aerodynamic Performance of Fire/Shield Stainless Steel Curtain Fire Dampers.

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.

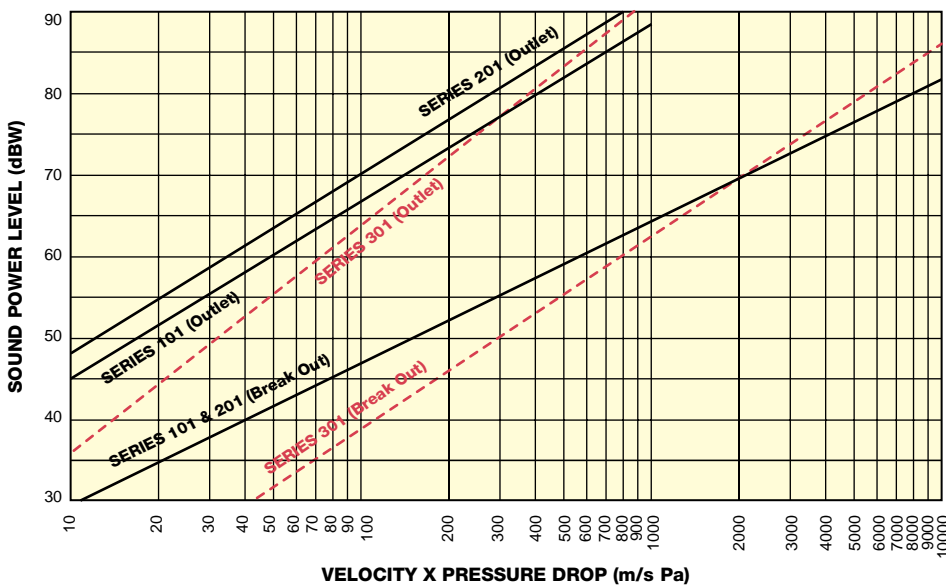
This independent test facility is approved under the NAMAS Scheme.

For a selection of duct velocity within the operational parameters of the dampers a resultant pressure drop can be determined and the sum of these two components applied to the Velocity X Pressure Drop Vs Sound Power Level Graph. The Sound Power Level Graphs are a result of a full range of acoustic tests on Fire/Shield Series 101, 201 and 301 dampers. The Spectrum Correction Data is applied to the number obtained from the graph and a complete Sound Spectrum of Flow Generated Noise for both Breakout (casing radiated) and Outlet (in duct) is obtained.

Pressure Drop Vs Velocity



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



Fire/Shield Breakout Spectrum Correction

Octave band	63	125	250	500	1K	2K	4K	8K	Hz
SERIES 101	-10	-7	-3	-9	-13	-20	-30	-33	dB
SERIES 201	-10	-7	-3	-9	-13	-20	-30	-33	dB
SERIES 301	-13	-10	-3	-7	-11	-12	-26	-42	dB

Fire/Shield Outlet (Induct) Spectrum Correction

Octave band	63	125	250	500	1K	2K	4K	8K	Hz
SERIES 101	-4	-12	-16	-18	-22	-29	-32	-38	dB
SERIES 201	-4	-11	-17	-19	-22	-30	-33	-40	dB
SERIES 301	-4	-10	-16	-18	-21	-24	-30	-38	dB

Specification

Fire/Shield

Curtain fire dampers comprising of a stainless steel folding curtain having unbroken movable joints, stainless steel constant tension closure springs for positive closure and stainless steel peripheral gasketing.

The Self Resettable, Latching Removable Release Mechanism Cassette, shall ensure the closure of the stainless steel curtain under full fire conditions. All housed in a galvanised steel fully welded spigotted type casing suitable for square, rectangular, circular or flat oval connections.

Fire/Shield as supplied by Actionair.

(Alternative rated release temperatures to 72 °C are catered for by a chain type link, please refer to Actionair Sales Office for details.)

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. All Fire/Shield Stainless Steel Curtain Fire Dampers are Fire Rated Dampers as they are held in the Open Position by a Thermally Actuated link operating at a temperature of approximately 72 °C ± 4 °C. The fitting of a Thermally Actuated Link operating at a higher temperature requires approval by the local relevant Local Authority.

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.

Testing and Maintenance

Fire/Shield 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.

All Fire/Shield Dampers should be tested by competent persons on completion of the installation and at regular intervals not exceeding two years.

Spring operated fire dampers should be tested annually and fire dampers situated in dust laden and similar atmospheres should be tested much more frequently, at intervals suited to the degree of pollution. (All in accordance with BS5588-9 1999 Test Frequency).

Standard Ordering Procedure

Please Specify

- Quantity** Number Required.
- Series** **FS101** Square/Rectangular (blades partly in airstream).
FS201 Square/Rectangular (blades outside airstream).
FS301 Circular (blades outside airstream).
FS401 Flat Oval (blades outside airstream).
- Accessories** **IF** Installation Frame.
EM240 240V A.C. Electromagnet release.
EM24 24V A.C. and D.C. Electromagnet release.
MSSP Single pole microswitch.
MSDP Double pole microswitch.
- Duct Size** Nominal Damper Spigot Size.

Example						
2	/	FS201	/	IF	/	1000(W) x 600(H)
Quantity		Series		Accessories		Duct Size

For further application, technical and pricing information, please refer to Actionair Sales Office.



Quality System
Certificate No 017
Assessed to ISO 9002

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 Tel: (01227) 276100 Fax: (01227) 264262 International Code: +441227
 Email: sales@actionair.co.uk Website: www.actionair.co.uk

Part of Ruskin Air Management Limited

Product Range

Smoke/Shield PTC™

Automatic Smoke and Fire Dampers

Vent/Shield PTC™

Automatic Smoke Release Dampers

Hot/Shield PTC™

High Operating Temperature Automatic Smoke and Fire Dampers

Hot/Shield Vent PTC™

High Operating Temperature Automatic Smoke Release Dampers

Actionpac LNS

Addressable Smoke and Fire Damper Control Systems

Actionpac EM

Electro Mechanical Smoke and Fire Damper Control Systems

Fire/Shield

Stainless Steel Bladed Curtain Fire Dampers

Trans/Shield

Air Transfer Smoke and Fire Dampers

Air/Shield

System Air Balancing and Shut-off Dampers

Energy/Shield

Heavy Duty Air Control and Shut-off Dampers

Flame/Shield

Adjustable Coated Baffle Grease Filters

Access/Shield

Series Circle / Oval / Tab Type Removable Access Doors

Hydropac PHW 230

Horizontal Waterside Control Fan Coil Units

Aeropac PHA 230

Horizontal Airside Control Fan Coil Units

Hydropac PHW 170

Horizontal Slimline Waterside Control Fan Coil Units

Hydropac PVW 230

Vertical Waterside Control Fan Coil Units

A-60 Marine Fire Damper

Designed for inclusion in Marine and Offshore Projects

Systempac

Fan Coil Unit / Acoustic Flex / Diffuser System Package