



AIR CONTROL

26SSD

SMOKE SHAFT DAMPER

26SSD SMOKE SHAFT DAMPER

Product description

The new 26SSD model damper designed specifically for shaft smoke control systems to meet the current standard BS EN 121010-8. The 26SSD has been fully tested to the requirements of the product standard to BS EN 1366-10 for Automatic Activation Systems and is a multi compartment damper being tested to BS EN 1366-2 in both directions.

Under the tests completed the damper will maintains its position in the open for two hours and remain closed for two hours. The 26SSD combination unit is suitable for system pressures up to 500Pa positive or negative.



DAMPER ASSEMBLY

Reverse side with cover plate removed

Damper construction

Blades (height dependant):

| | |
|----------|---|
| Width | 136.0mm |
| Centres | 125.0mm |
| Material | Double skin 1.0mm galvanised mild steel |

Frame

| | |
|--------------------|---|
| Flange width front | 25mm |
| Flange width back | 50mm |
| Frame depth | 110mm |
| Material | 1.6mm galvanised mild steel |
| Corners | Die-formed corner channels, button-locked for strength and rigidity |

Linkage External, enclosure within the frame, out of airstream, zinc-electroplated mild steel

Bearings Ø12.7mm grade 303 stainless steel
Axles Ø12.7mm zinc-electroplated mild steel bolted directly through the blade

Side jamb Stainless steel grade 301 S21 – to BS EN10088-2 1.4310 – cambered profile

Top & bottom jambs Stainless steel grade 301 S21 – to BS EN10088-2 1.4310 – cambered profile

Actuator housing 150mm high allowing easy access to the damper actuator

Junction Box Size is 100mm x 100mm x 75mm mounted in actuator housing

Sleeve Construction

| | |
|--------------|--|
| Material | 1.2mm galvanised mild steel |
| Corners | Die-formed for strength and rigidity |
| Rear flange | 40mm flange to retain the damper and for securing the damper in position |
| Front flange | 14mm to sit flush on the face of the wall |
| Seal | Kerafix 2000 black seal – 20mm wide with a melting point of 1,330°C |

Minimum / Maximum Structural Opening Sizes

| | |
|---------|-----------------------|
| Minimum | W 523mm x H 498mm |
| Maximum | W 1,013mm x H 1,998mm |

Actuator Options

24V or 230V actuator

Power open / power closed Johnson actuator M9116 – with built-in microswitches for position indication. Mounted in the actuator section and wired into a junction box

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Installation options

Tested in a Type A drywall, with stud and two layers of plasterboard (15mm thick on each side).

Under DIAP the units can be installed in Type A to C drywalls and Blockwork to the same depth.

Performance

Maximum duct velocity – 20 m/s

Maximum system pressure – 500Pa

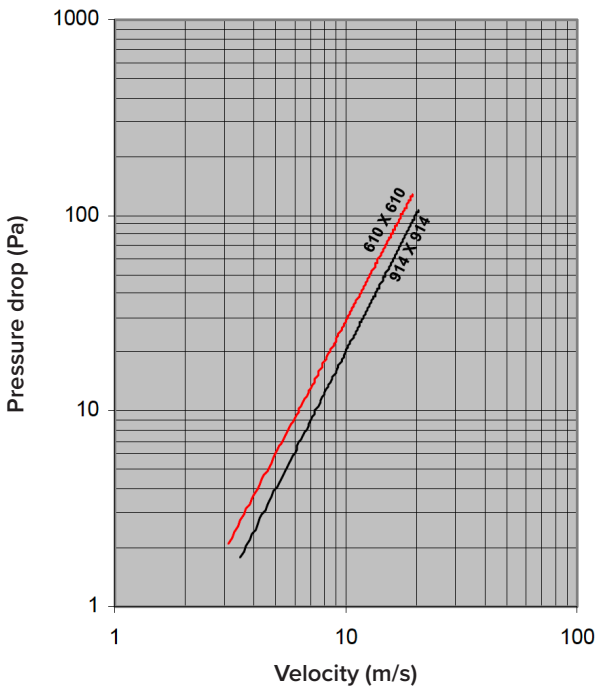
Operational test

Actuator 10,000 cycles

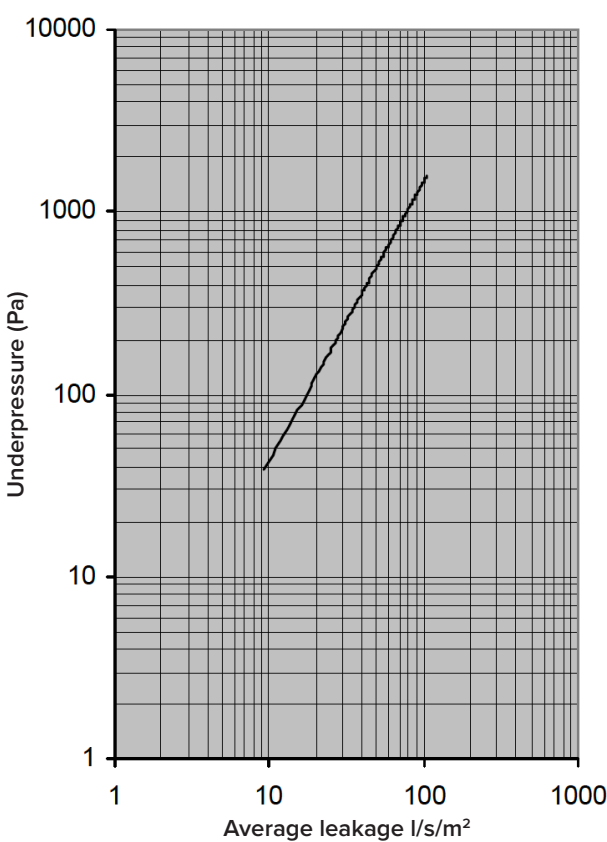
Total weight for combined damper, sleeve and grille (kg)

| Height | Width | | | | | | |
|--------|-------|-----|-----|-----|-----|-----|-------|
| | 400 | 500 | 600 | 700 | 800 | 900 | 1,000 |
| 400 | 19 | 22 | 24 | 27 | 30 | 32 | 35 |
| 450 | 21 | 23 | 26 | 29 | 32 | 34 | 37 |
| 500 | 22 | 25 | 28 | 31 | 34 | 36 | 39 |
| 600 | 25 | 28 | 31 | 34 | 38 | 41 | 44 |
| 700 | 27 | 31 | 34 | 38 | 42 | 45 | 49 |
| 800 | 30 | 34 | 38 | 42 | 46 | 49 | 53 |
| 900 | 33 | 47 | 41 | 45 | 50 | 54 | 58 |
| 1,000 | 35 | 40 | 44 | 49 | 54 | 58 | 63 |
| 1,100 | 42 | 48 | 54 | 60 | 66 | 72 | 78 |
| 1,200 | 46 | 51 | 58 | 64 | 70 | 76 | 83 |
| 1,300 | 49 | 54 | 61 | 67 | 74 | 80 | 87 |
| 1,400 | 52 | 57 | 64 | 71 | 78 | 85 | 92 |
| 1,500 | 54 | 60 | 68 | 75 | 82 | 89 | 97 |
| 1,600 | 57 | 63 | 71 | 78 | 86 | 93 | 101 |
| 1,700 | 60 | 66 | 74 | 82 | 90 | 98 | 106 |
| 1,800 | 62 | 69 | 78 | 86 | 94 | 102 | 111 |
| 1,900 | 65 | 72 | 81 | 89 | 99 | 106 | 115 |
| 2,000 | 68 | 75 | 84 | 93 | 103 | 111 | 120 |

Pressure drops – fully open



Damper blade leakage



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Product application

The 26SSD has been specifically designed for smoke shaft ventilation systems serving multi-storey commercial or residential properties. Its purpose is to open in the area of incidence for smoke extraction while remaining closed in other areas preventing the spread of smoke maintaining its integrity in preventing the spread of fire.

This unit has been fully tested in accordance to the harmonised standard BS EN 12101-8 and is suitable for automatic activation systems. It has been tested to BS EN 1366-10 in both directions, also tested to BS 1366-2 in both directions that classifies the unit to be suitable for multi-compartment. The unit is suitable for 500Pa system pressure and tested up to 10,000 cycles including additional cycles 10% under / 15% over voltage.

The 26SSD comprises of three units, damper, removable sleeve and a grille. The benefit of the units design is that it is simple to install with various options and has easy access to maintain. The internals of the sleeve and damper are painted matt black as standard so they are hidden from view to allow the grille on the face to have the largest free area of 90%. There is sufficient space between the damper and grille to avoid interference with the damper blade operation.

The operation of the damper is controlled by a power open / power close actuator mounted at the bottom of the unit with cover plates for protection. Included within the housing is a junction box and glands for cabling connection on site.

The damper size tested was to suit a structural opening of 1,013mm wide x 1,998mm high and that is the maximum size that can be supplied in one piece.

Testing requirements

Product standard BS EN 12101-8 states the requirements for the testing, classification, factory control process and information to be published.

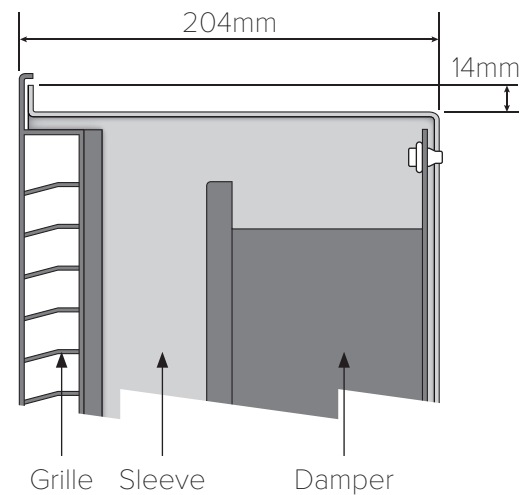
Smoke test BS EN 1366-10 – Lists the testing of the dampers tested in the open including cyclic testing for 10,000 cycles with weights fitted to the blades.

Fire test BS EN 1366-2 – fire test for dampers tested to stay closed.

Classification BS EN 13501-4 – Confirms the testing and the levels tested to. Consistency of Consistency of Performance—issued by the notified BRE confirming all details submitted allows the Declaration of Performance can be issued.



Unit assembly



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Installation

Ensure that the structural opening matches the size shown on the damper. The 26SSD is supplied with the sleeve fitted to the damper and can be installed as one, or alternatively the sleeve can be removed and fitted first especially on large units.

The sleeve has a 14mm flange on the front that must sit flush with the wall when fitted. Using screws fitted through the internal top, bottom and sides through to the wall as detailed on the drawing securing it to the wall. The damper is then fitted into the sleeve and secured with four fixing on the sides top and bottom.

Before fitting the damper into the wall the external cabling supplied by others should be connected to the damper. There is a cover plate at the bottom with glands fitted that should be removed and with the external cables fitted through the glands and terminated as the wiring details in the internal junction box. The junction box and glands will accept cable that meet BS 8519.

The damper can then be installed in the sleeve and secure a four positions two at the top on the sides and two at the bottom sides. Power should be connected and pressing the test switch on the junction box you can check the damper fully opens. Pressing the power button again will close the damper. Once checks have been completed, isolate the power.

Once the damper has been secured the grille can be fitted to the opening of the sleeve. Four corner pieces supplied loose are to be screw fixed in each corner into the pre-punched holes in the sleeve and these will match fixing plates on the rear of the grille. The grille has a 35mm flange which covers the sleeve and would be flush to the wall.

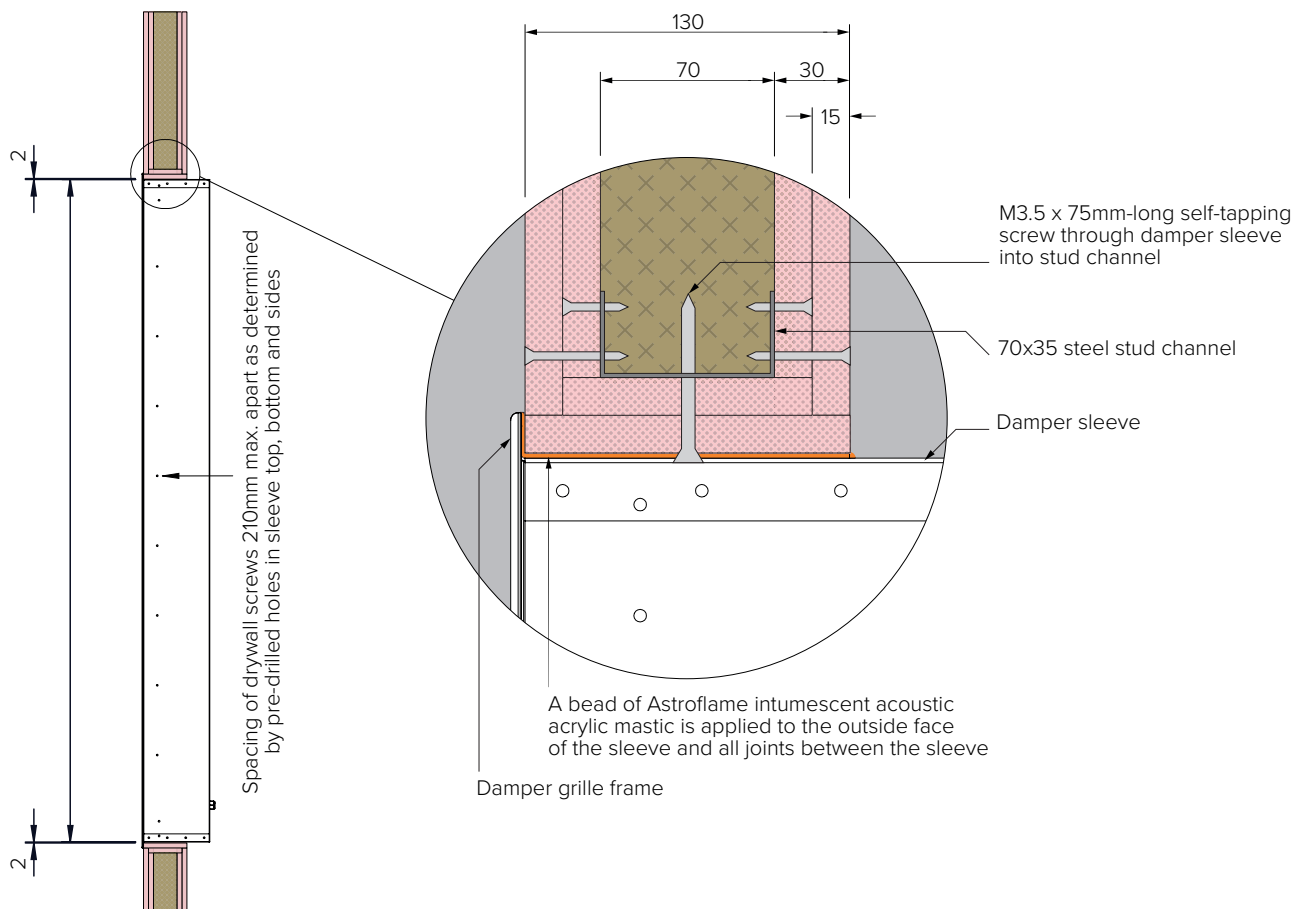
Sealing the damper to the rear flange with a fire retardant mastic.

Removing the actuator

First isolate power from the damper. The actuator can be accessed from the front panel of the damper by removing the grille by unscrewing the screws in each corner. The panel has M6 35mm hex bolts that are removed and this gives full access to the actuator.

Open the junction box. Remove the actuator wiring from the terminal strip and remove the wiring from the junction box then the damper actuator head needs to be loosened and then the actuator can slide off the damper shaft.

When fitting a new actuator ensure that the blades are fully closed and install as above in reverse.



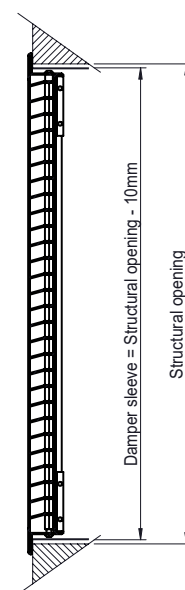
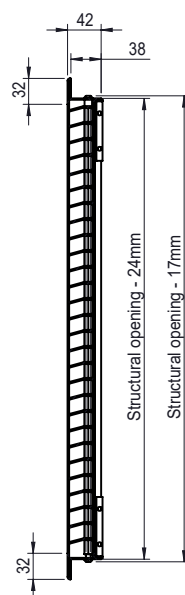
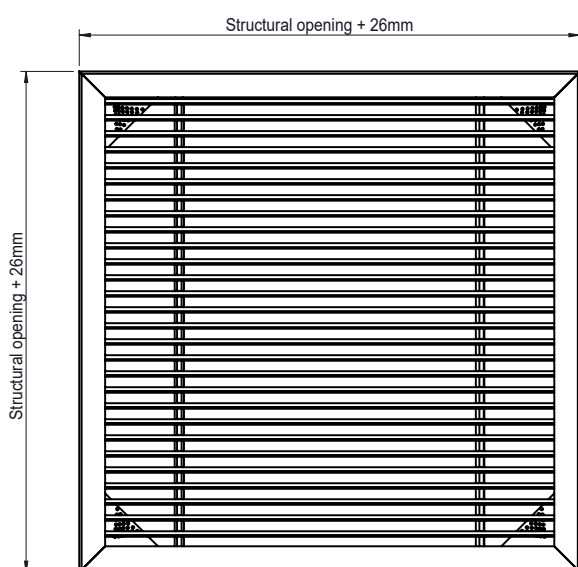
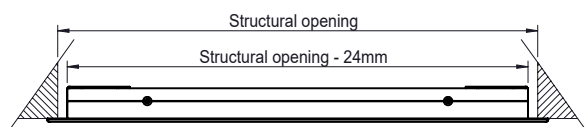
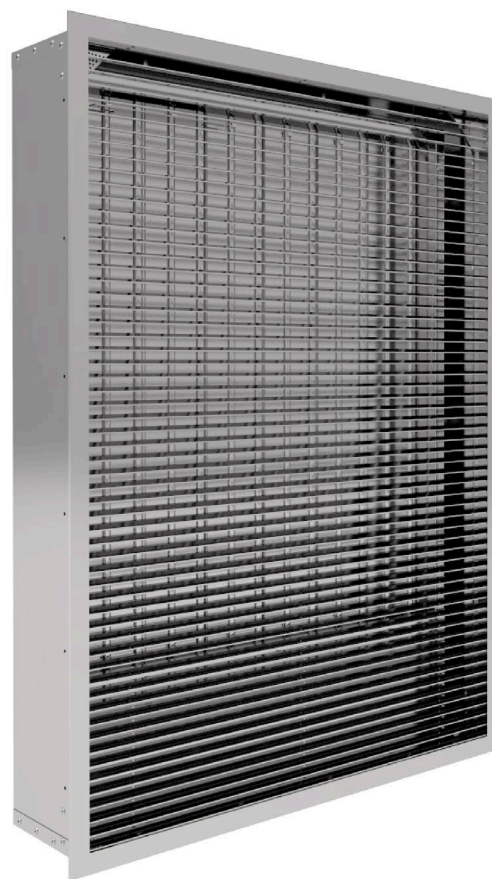
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Grille description

- 1 The grille has been specifically designed for the shaft damper ventilation systems offering rigidity and the largest free area manufactured from extruded aluminium construction with precision mitred corners.
- 2 When the grille height is above 1,200mm it is supplied in two sections but with hidden connection pieces there is no join visible from the front face
- 3 The grille was included in both the 1366-Part 10 and 2 testing as required in the product standard to ensure the damper performance is not affected by the grille under extreme temperatures.
- 4 Standard 5. Standard finish is polyester powder finish to RAL 9010 semi gloss white.

Construction

| | |
|------------------|---|
| Blades | Constructed from extruded aluminium construction with a 15° or 40° deflection |
| Supports | Additional support studs added over 750mm wide |
| Min / max sizing | Tailored to damper size |
| Finish | Polyester powder finish White RAL 9010 20% Gloss, BS or RAL colours upon request |
| Fixing | Surface mount colour coordinated ø8x1 1/2" wood screws |



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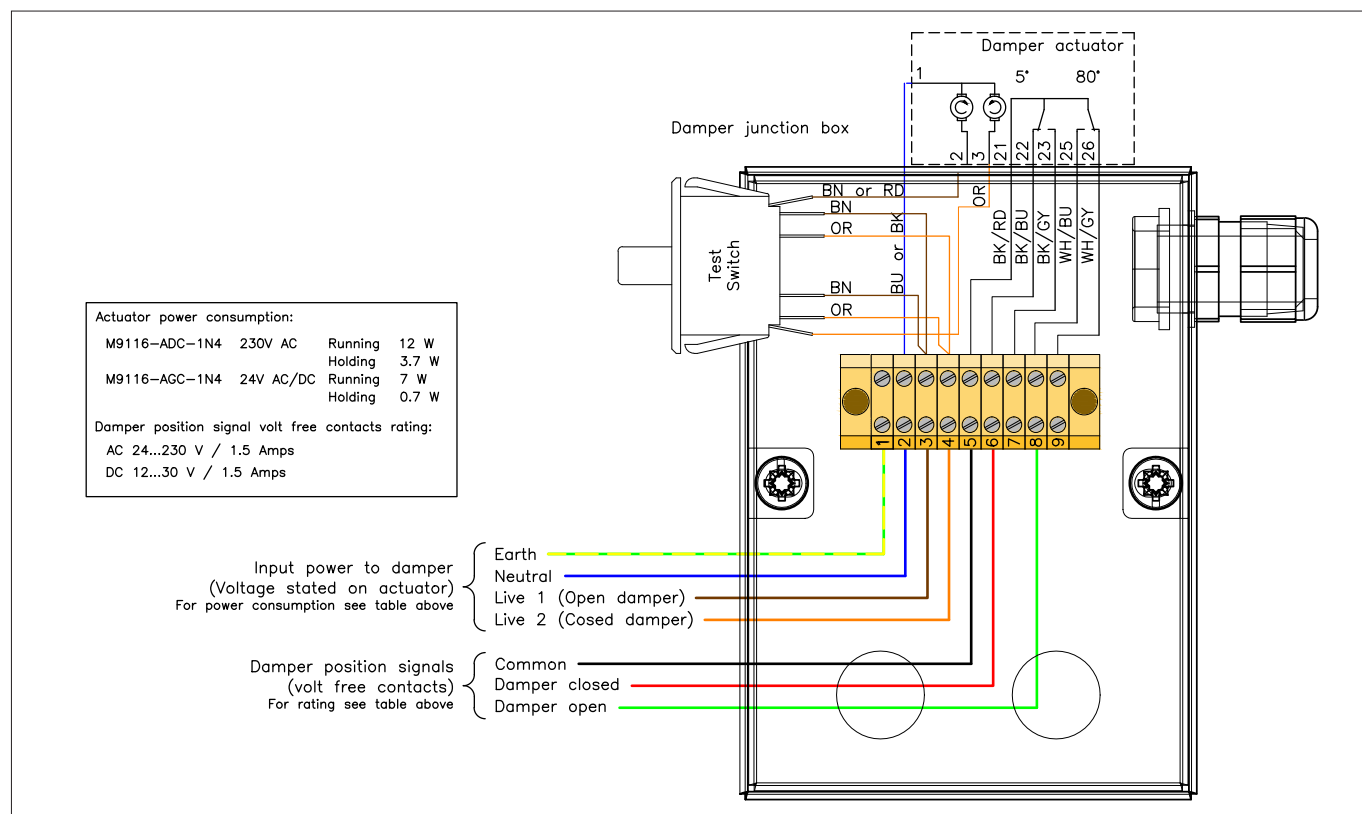
Actuator specification

| | | |
|-----------------------------------|---|----------|
| Torque | 16 Nm | |
| Damper area | 3.0 m ² | |
| Running time (open) | 16 s | |
| Running time (closed) | 16 s | |
| Supply voltage | M9116-ADC-1N4 – 230 V AC M9116-AGC-1N4 – 24 V AC/DC | |
| Frequency | 50-60 Hz | |
| Power consumption | AC/DC 24 V | AC 230 V |
| – running | 7.0 W | 12.0 W |
| – at end position | 0.7 W | 3.7 W |
| Dimensioning | M9116-ADC-1N4 – 13.0 VA / 0.35 A @ 2 ms M9116-AGC-1N4 – 13.0 VA / 3.4 A @ 2 ms | |
| Control signal | ON / OFF or floating | |
| Position signal | Potentiometer 0.5 W / ±10% | |
| Angle of rotation / working range | 90° (93° mechanical) | |
| Angle of rotation / limitation | 5° to 85° in 5° steps | |
| Auxiliary switches | 3 (1.5) A, AC 230 V | |
| – S1 setting range | 5° to 85° < adjustable | |
| – S2 setting range | | |

| | |
|-------------------------|--|
| Cable | 1.0 m halogen-free |
| – Motor | 3-wire 1-2-3 |
| – Switches | 5-wire 21-22-23-24-25 |
| – Potentiometer | 3-wire 11-12-13 |
| Lifetime | 60,000 rotations |
| Noise level | 45 dB (A) |
| Protection class | II |
| Degree of protection | IP 54 |
| Mode of action | Type 1 |
| Ambient conditions | |
| – Operating temperature | -20 to +50°C / IEC 721-3-3 |
| – Storage temperature | -30 to +60°C / IEC 721-3-2 |
| – Humidity | 5 to 95% r.F no condensed |
| Weight | M9116-ADC-1N4 – 1.2kg M9116-AGC-1N4 – 1.1kg |
| Service | Maintenance-free |
| Standards | |
| – Mechanics | EN 60 529 / EN 60 730-2-14 |
| – Electronics | EN 60 730-2-14 |
| – EMC emissions | EN 50 081-1:92 / IEC 61000-6-3:96 |
| – EMC immunity | EN 50 082-2:95 / IEC 61000-6-2:99 |

Wiring instructions

Wiring detail for dampers fitted with Johnson M9116-ADC-1N4 (230V AC) or M9116-AGC-1N4 (24V AC/DC) actuators.



26SSD SMOKE SHAFT DAMPER

Declaration of Performance (DoP)

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

| | |
|---|---|
| INTENDED USE | Smoke Control Damper for multi-compartments |
| HARMONISED STANDARD | BS EN 12101-8:2011 |
| MANUFACTURER | Advanced Air (UK) Ltd Burrell Way, Thetford, Norfolk IP24 3QU Email projects@advancedair.co.uk Web www.advancedair.co.uk Tel 01842 765 657 |
| SYSTEM OF ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE | System 1 |
| NOTIFIED BODY | The notified body 2831 – BRE carried out the initial inspection of the manufacturing plant and of the production control as well as the continuous surveillance and evaluation of the factory production control according to System 1 of the Construction Products Regulation. |
| CERTIFICATE OF CONSTANCY OF PERFORMANCE | 2831-CPR-P0027 issued on 15 th March 2021. |

| CONSTRUCTION PRODUCT | | |
|--|----------------------------|-------|
| Intended Use | | |
| ESSENTIAL CHARACTERISTICS | PERFORMANCE LEVEL ACHIEVED | NOTES |
| Nominal activation conditions/sensitivity - sensing element load bearing capacity - sensing element response temperature | Pass Pass | |
| Operation reliability | Pass | |
| Response delay (response time) | Pass | |
| Durability of response delay: - sensing element response to temperature and load bearing capacity | Pass | |
| Durability of operational reliability - open and closing cycle tests | Pass | |

Signed on behalf of Advanced Air (UK) Ltd:



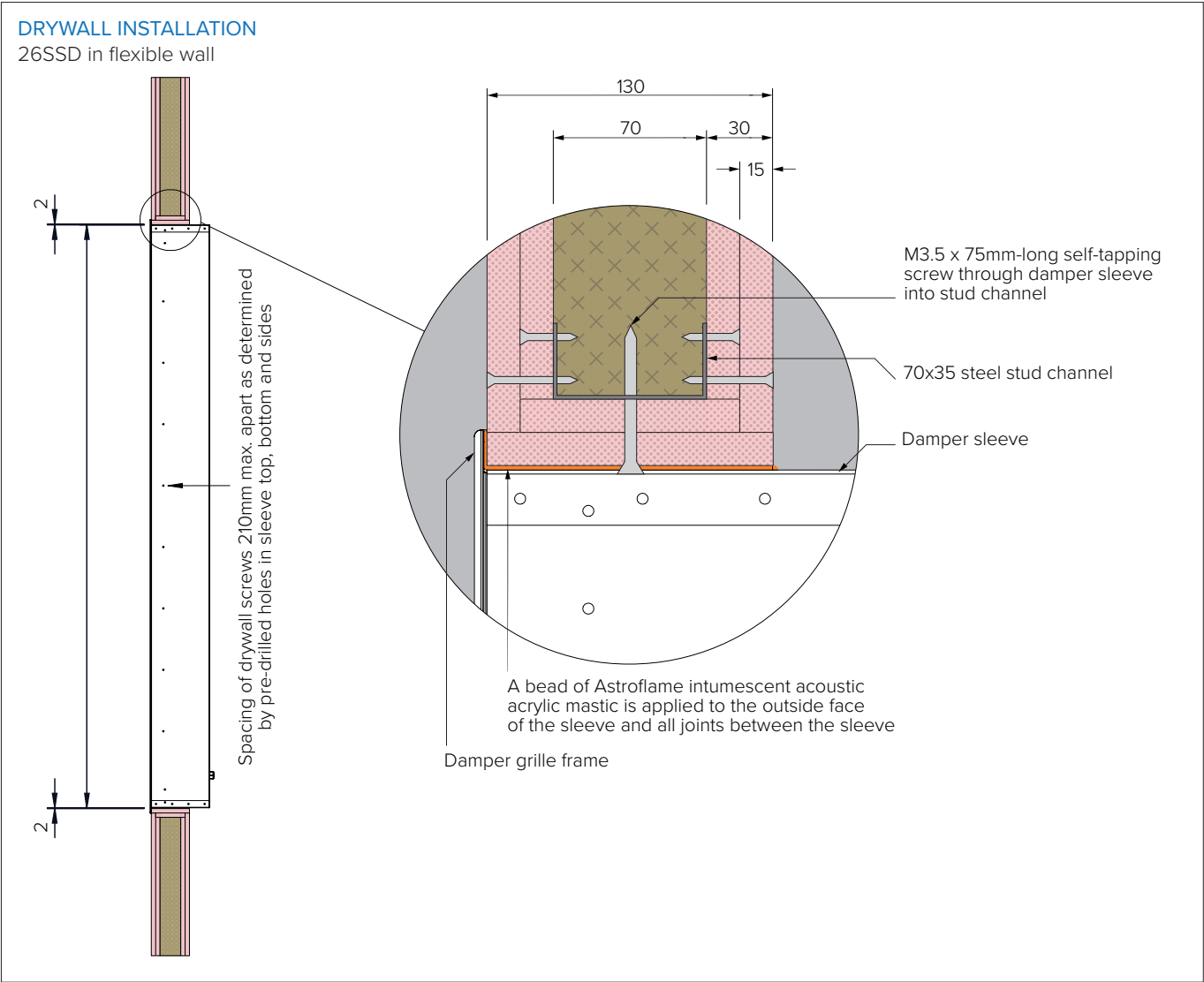
Andrew Sargent
General Manager
15th March 2021



26SSD SMOKE SHAFT DAMPER

Declaration of Performance (DoP)

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



| 26SSD IN FLEXIBLE DRYWALL | | | | |
|--|---|--|-----------------------|---------------------------------------|
| Size (mm) | Installation method | Wall type | Classification report | Performance classification |
| Minimum size: 519 x 400 Maximum size: 1,013 x 1,998 | Drywall shown (same method for blockwork) | Flexible wall Type A, B & C Minimum 122mm thick | EFR-20-002036 | E90 (VeW i ↔ o) S500 C300 AA Multi |
| | | | EFR-20-002036 | E90 (VeW i ↔ o) S500 C10000 AA Multi |
| | | | EFR-20-002036 | E120 (VeW i → o) S500 C300 AA Multi |
| | | | EFR-20-002036 | E120 (VeW i → o) S500 C10000 AA Multi |