COMMERCIAL HARDWARE

Façade Automation for Natural & Smoke Ventilation

TESTED SOLUTIONS AND STANDARD DETAILS

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Our Sectors

RESIDENTIAL

COMMERCIAL

HEALTH

EDUCATION

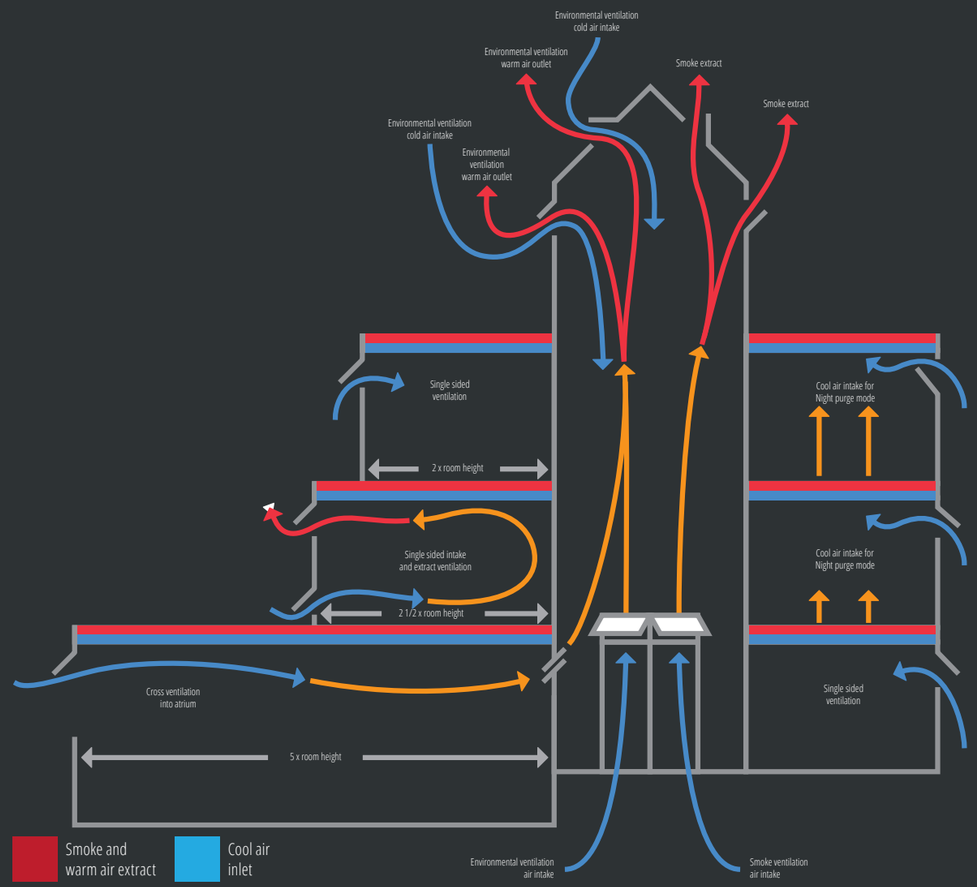
INFRASTRUCTURE

RETAIL

General Principles of Airflow

The direction of airflow or smoke flow is an important factor when selecting a suitable vent type.

Basic principles of airflow relative to external and internal temperatures and pressures will determine the optimum solution. As well as design guidance and best practice, regulations dictate the hinge arrangements.



Regulations & Design Guides

Construction Product Legislation Hierarchy

1. Construction Products Regulation

From 1st July 2013 the Construction Product Directive (CPD) was replaced with the Construction Products Regulation (CPR) and became mandatory, and therefore a legal requirement for manufacturers to draw up a Declaration of Performance and apply CE marking to any construction products which is covered by a harmonised European standard.

This is a major change, as affixing the CE marking under the provisions of the CPD was previously voluntary in the UK.

All hENs under the CPR include an Annex (termed Annex ZA) which lists the regulated requirements according to a mandate issued to CEN or CENELEC by the European Commission and the clauses in the standard in which they are addressed. Annex ZA.1 in the hEN becomes a checklist for CE marking for which the manufacturer can see all the mandatory requirements for the product and how it can be met.

2. Building Regulations

Building regulations are minimum standards for design, construction and alterations to virtually every building. They are developed by the Government and approved by Parliament

3. Approved Documents

Approved documents provide guidance on ways to meet the building regulations and contain practical examples plus solutions on how to achieve compliance and should be read in conjunction with the regulations to provide clarity.

4. Design Guides

Design guides offer additional assistance in achieving regulatory requirements. Often produced by professional trade groups or associations within specialist field.

Natural Ventilation

Natural Ventilation

Regulations and Design Guides:

Document	Content	Date
Building Regulations 2010	Building regulations are minimum standards for design, construction and alterations to virtually every building. They are developed by the government and approved by Parliament.	2010
Approved Document F	Building regulation in England for the ventilation requirements to maintain indoor air quality.	Oct 2010 Incorporating 2013 amends
Approved Document K	Building regulation in England covering the buildings users protection from falling, collision and impact in and around the building.	Jan 2013
Building Bulletin 101	Guidelines on ventilation, thermal comfort and indoor air quality in schools	Aug 2018
BS EN 60335-2-103:2015	Safety. Particular requirements for drives for gates, doors and windows	Jan 2015
CIBSE Guide AM10	Natural Ventilation in non-domestic buildings	Sep 2005
BREEAM	Non-Domestic Buildings Technical Manual	2018
CIBSE TM52 Guide	The Limits of Thermal Comfort: Avoiding Overheating in European Buildings	Oct 2013
BS EN 16798-1:2019	Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics	May 2019

Smoke Ventilation

Smoke Ventilation

Regulations and Design Guides:

Document	Content	Date
Building Regulations 2010	Building regulations are minimum standards for design, construction and alterations to virtually every building. They are developed by the government and approved by Parliament	2010
Construction Products Regulation	Application of CE mark to any construction product covered by a harmonised European standard	JUL 2013
Approved Document B Vol 1	Fire Safety: Dwelling Houses	2019 Edition
Approved Document B Vol 2	Fire Safety: Buildings other than Dwelling Houses	2019 Edition
BS 7346-8:2013	Components for smoke control systems. Code of practice for planning, design, installation, commissioning and maintenance	DEC 2013
BS EN 9999: 2017	Code of practice for fire safety in the design, Management and use of buildings	FEB 2017
BS EN 9991: 2015	Fire safety in the design, management and use of residential buildings. Code of practice	OCT 2015
BS EN 12101-2:2003	Smoke and heat control systems. Natural Smoke and heat exhaust ventilators	2003
Regulatory Reform (Fire Safety) Order 2005	Statutory law covering general fire safety in England and Wales	2005
Smoke Control Association	Guidance on Smoke Control to Common Escape Routes In Apartment Buildings (Flats & Maisonettes) Rev 2	OCT 2016

Security & Safety Standards, Regulations & Schemes

Regulations and Design Guides:

Document	Content	Date
Building Regulations 2010	Building regulations are minimum standards for design, construction and alterations to virtually every building. They are developed by the government and approved by Parliament	2010
Approved Document K	Protection from falling, collision and impact	2013
Approved Document Q	Security - Dwellings	2015
PAS24:2016	Enhanced security performance requirements for doorsets and windows in the UK.	2016

To meet the requirements of both Approved Document Q and SBD the vent must be tested to PAS 24 and be resistant to an external force of 3000N. The SECO N actuator has successfully passed this test, providing 4000N per locking point. An audited process is required to certify the vent to PAS 24, whereby the locking point location must be replicated in every different vent width, relative to its position in the test. In accordance with the requirements for SBD within schools, the SECO N range of actuators can also give a signal to advise that a vent is open.

Design Guidance Selection Process

Is the application for Smoke or Environmental Ventilation?

Smoke

Building:

High Rise Residential

Typical Free Area Methodology:

Approved Document B
BS9991
SCA Guidance Document

Building:

Non-Residential

Typical Free Area Methodology:

BS9999 (Incorporating all previous BS5588 Series)

Natural

Building:

Schools

Effective Area:

Building Bulletin 101
Priority Schools Building Programme

Building:

Others

Effective Area:

Approved Document F
CIBSE Guide AM10

There are generally three methods to measure free area through a vent which are applied relative to the building type and the application (smoke or environmental ventilation).

In all applications, be aware of obstructions such as reveals, recesses, side walls etc., and of course other vents.

All calculations should be submitted for approval by the Design Team.

Geometric Free Area Calculation for High Rise Residential

Smoke Ventilation

The measurement of the free area of a vent is defined in Appendix C to Approved Document B (ADB) 2013.

The total unobstructed cross sectional area, measured in plane where the area is at a minimum and at right angles to the direction of air flow (as shown in the diagram on the right).

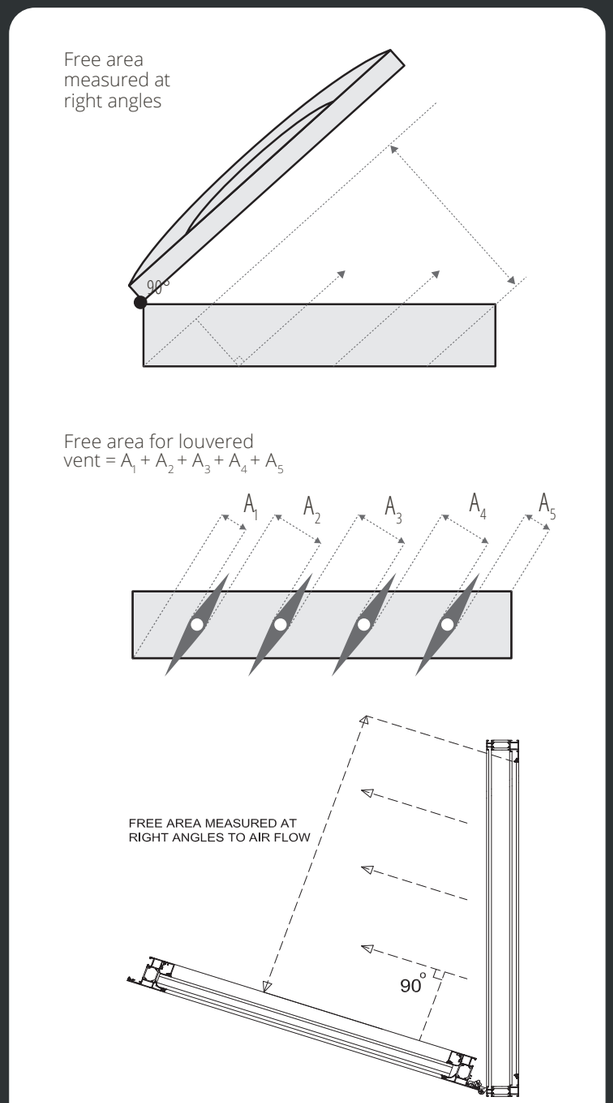
Generally 1.0m2 geometric free area is required for head of stair and 1.5m2 for end of corridor vents however each project will have its own design. Aerodynamic free area calculation is also allowed under Approved Document B.

The above two top images show how Approved Document B describes how you measure free area, but they do not illustrate how this is interpreted for a window.

The image at the bottom shows a window interpretation of Approved Document B Diagram C7 as a bottom hung or side hung smoke vent.

There are documents in existence produced by the Smoke Control Association that seek to give clarity on how this is measured which typically results in a double stacked bottom hung open out or side hung solution, however the ultimate regulation is ADB.

Free area calculations should be submitted for approval to an approved Inspector to be assessed for ADB compliance.

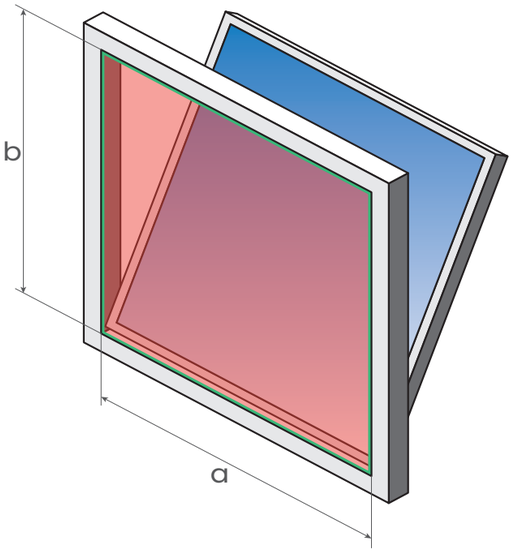


Aerodynamic Free Area Calculation

Smoke Ventilation

The internal throat area a x b (Av) is multiplied by the efficiency factor or co-efficient of discharge (Cv) of the vent which is determined by the opening angle.

The opening angle of the vent dictates the efficiency factors achieved, generally 0.3-0.6.



Internal Throat Area:

a x b = maximum
geometric area (Av)
x co-efficient value of vent (Cv).

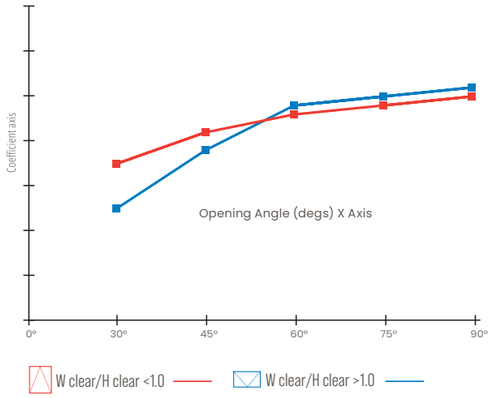
The internal throat is the inner most clear dimensions of the vent.

Aerodynamic Free Area calculations are often used for non-residential life safety means of escape applications such as atria intake and extract.

It can also be used as an alternative to Geometric Free Area in High Rise Residential applications as stated in Approved Document B.

Typical Example of Aerodynamic free Area Co-efficient

This information is only available if an aerodynamic test is carried out. Generally 30-60% efficiency factors are achieved dependent upon the opening angle. **Assumed Co-efficient values must not be used or transferred from one system to another.**



The different results are relative to the aspect ratio of the vent width / height.

An example of how the aerodynamic calculation works:

Divide the vent width / height to ascertain the correct aspect ratio. Measure the internal throat area of the vent to confirm the maximum geometric free area (Av). Choose the required stroke length for the actuator and establish the opening angle. In accordance with the table, confirm the co-efficient value at that degree of opening. Multiply the maximum geometric area by the coefficient value (Cv) to give the Aerodynamic value (Aa).

Aa = Av x Cv

Contact SE Controls Senior Key Account Manager (SKAM) for project specific free area calculations.

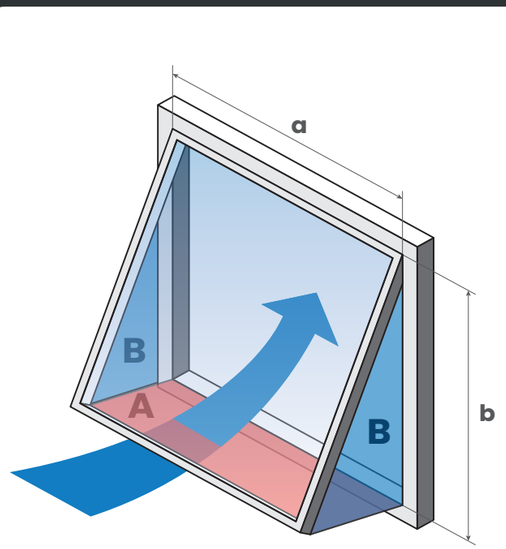
Effective Area Calculation

Natural Ventilation

Similar to aerodynamic area, this is the effectiveness of the vent rather than physical geometric area.

This method is used for non-residential environmental ventilation applications. The physical area produced by opening the window: A + 2B x efficiency factor, as detailed in CIBSE Guide AM10.
This area cannot exceed the maximum geometric area of the vent a x b.

Please note that neighbouring vents, obstructions and reveals will impact air flow.



Effective Area:

A + 2B x Efficiency Factor
(Which is application/project specific, please refer to SE Controls).

The internal throat is the inner most clear dimensions of the vent.

CPR and CE Marking

Whilst the use of CE marking has been commonly applied to a wide variety of products for a number of years, the need to CE mark products sold into the UK Construction market became mandatory in July 2013 when the Construction Product Directive became the Construction Products Regulation (CPR).

The CPR mandates that where a European harmonised standard exists for a product, a manufacturer must draw up a declaration of performance and apply CE marking to this product. Any product that has a harmonised European standard that is placed upon the construction market must be CE marked against that standard.

The risks of non compliance are refusal of payment, LAD's due to delays in handover and criminal prosecution for failing to meet mandatory life safety standards.

CE

CE Marking Process Under CPR

STAGE 1 Product

Identify if it has an applicable Harmonised European Norm (hEN) EU directive.

↓

STAGE 2 Assess

Review the essential characteristics and establish the route to conformity.

↓

STAGE 3 Test

Test the product against the standard at an independent accredited facility - Certify (CCP).

↓

STAGE 4 Process

Ensure that you have sufficient Factory Production Control (FPC) processes and qualifications to manufacture the product. For life safety systems, a System 1 FPC process is required (audited by an external notified body).

↓

STAGE 5 Certify

Submit a Declaration of Performance (DoP) and affix the CE marking to the product or document.

NO DoP - NO COMPLIANCE

Introduction to EN 12101

EN 12101 family of standards detail the mandatory requirements for life safety products and systems.

The three standards pertinent to this document are parts 2, 9 and 10, which encompass smoke ventilators (SHEV's) and their controls.

PART 1
Specification for smoke barriers.

PART 2
Natural Smoke And Heat Exhaust Ventilators (SHEVs).

PART 3
Specifications for powered SHEVs.

PART 4
Installed SHEVs systems for smoke and heat ventilation.

PART 5
Guidelines on functional recommendations and calculation methods for SEHVs

PART 6
Specification for pressure differential systems.

PART 7
Smoke control sections.

PART 8
Smoke control dampers.

PART 9
Control panels (pr EN).

PART 10
Power supplies.

EN 12101 Part 2

EN 12101-2 dictates that an opening smoke vent is in itself a unique product which can only be CE marked if it meets certain criteria. The vent profile and actuator need to be tested together to comply to EN 12101-2 at an accredited testing facility.

The installation onsite must be identical to the test. Therefore an audited certified Factory Production Control (FPC) process must be followed, with accompanying documentation. As this is a life safety product, the CPR does not allow alternative products to be utilised, other than the prescriptive products used in the test.

STAGE 1 Consult

Consult Commercial Hardware to ensure parameters are met and select appropriate tested actuator.

↓

STAGE 2 Fabricate

Fabricate as per the tested solution preparation details under System 1 FPC to EN 12101-2.

↓

STAGE 3 Install

Installation must be taken under System 1 FPC.

↓

STAGE 4 Certify

Commercial Hardware produce a Declaration of Performance (DoP) declaring ALL essential characteristics and CE Mark.

Note:

The CE Mark does not solely satisfy the requirements of the CPR, it is only a part of it. The ultimate document to prove compliance is the DoP which is signed by a director of the company placing the product onto the market. The DoP must contain references to the tests, notified body and declare performance against all essential characteristics required by the standard.

Refer to Page 40, Route to Market for the appropriate SE Controls compliant offer.

EN 12101-2:2017 has been blocked from citation in the OJEU by the European Commission. This means that it is not yet possible to CE mark products according to this standard. CE marking is only possible after the 'Date of applicability of the standard as a harmonised standard', which is part of the citation in the OJEU. Until the new standard is cited, CE marking of products in scope must follow EN 12101-2:2003.

See link to the current harmonised standard listed in OJEU; https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/construction-products_en

Manual Winding Gear

Simple, inexpensive solution for Natural ventilation.

The 'Clearline' (Originally Teleflex) system is designed for out of reach windows in all buildings/markets: commercial, education, healthcare, residential and domestic.

The system entails a chain opener operated via a winding handle linked together by conduit and cable. Winding handles can be positioned to allow easy opening of hard to reach locations, while operating multiple vents via a single winding handle with a maximum cable run of up to 18 metres. This surface mounted application offers greater flexibility and compatibility with almost all window systems.

Key Features

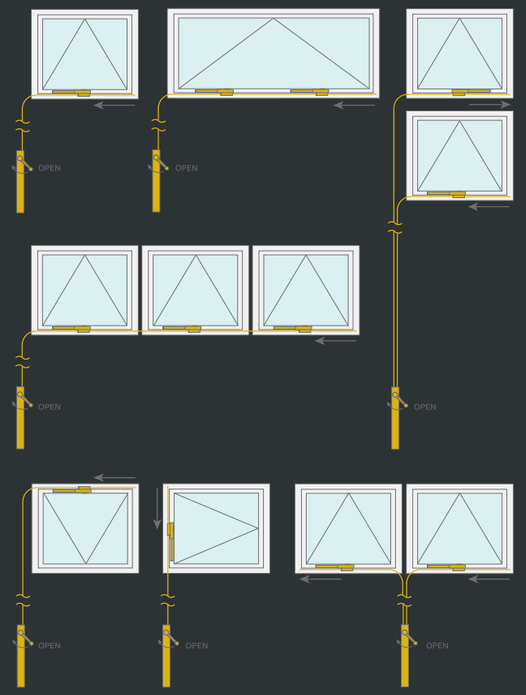
- Quality Engineered Stainless Steel Chain Openers.
- Up to 18m operation from Winding Handle to Chain Opener.
- Range of handle options to suit differing weight loads
- Low maintenance hard wearing system.
- Range of colours
- Product Manufactured in the UK.

Details

Colour Options

White	- RAL 9010
Grey	- RAL 9006
Brown	- RAL 8017
Black	- RAL 9005
Anthracite Grey	- RAL 7016

Configuration Options



Accessories

Conduit (3M Lengths)

1 3 Piece Saddle Bracket

2

Cable Connector

3

Control Cable

6

Swage tool

7

Conduit Bend Former

8

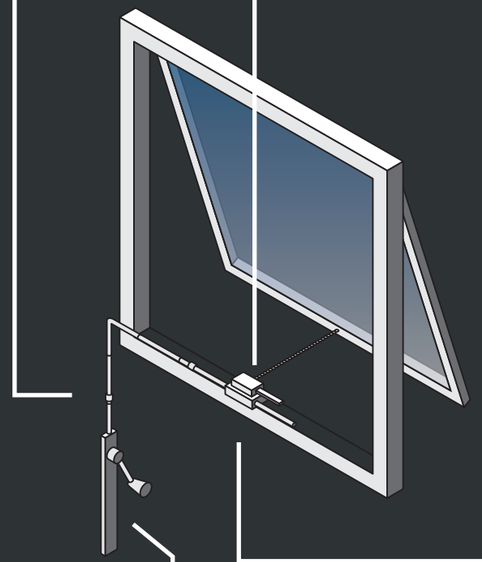
Brackets

Wide Fixing Plate

4

Narrow Fixing Plate

5



Chain Opener

250mm

7

380mm

8

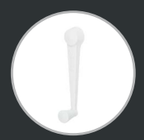
Operating Handles

Midi Operator

Maxi Operator

Mini Operator

100mm Handle



SECO Ni 24 40

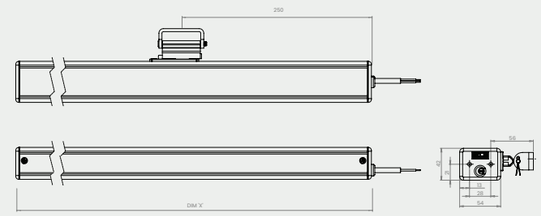
Technical Data

Actuator	SECO Ni 24 40
Actuator Type	24V dc Chain Opener
Voltage (All +/-5%)	24V dc
Current Draw (Amp)	0-600mm= 1.0A 601-900mm= 1.2A
Stroke	0-600mm (configurable) 601-900mm (configurable)*
Operating Speed	15mm/sec min. 5mm/sec (configurable)
Ambient Operating Temp	-5°C to +60°C
Thrust Force	400N
Close Force	400N
Soft Close	Yes
Switching	Electronic
Standard Finish	Powder coated Grey (RAL 9006)
Seal Relief	Programmable up to 20mm
Clamping Force	400N
Colour Option	Other RAL colours available on request
Flex Length	2M
Flex Type	2 core/0.75mm silicone 4 core (volt free contact) as option
Flex colour	Grey
Product Warranty	15,000 cycles
Dty Cycle	22% (2 mins on, 7 mins off)
Protection Degree	IP20
Bracket	Sill fixing/open inward/ face fix bracket
Synchronisation	Optional
Application	Smoke and Environmental Ventilation

Dimensions

DIM X (MM)	STROKE (MM)
635	UP TO 600
785	601-900

Technical Drawing



Product Codes

Silver Grey (RAL 9006)	Operating Voltage	Force	Stroke
AASI400600S	24V	400N	600mm
AASI400900S	24V	400N	900mm

Bracket Product Codes

Height (mm)	0	5	8	10	15	20
35	AKS16000001	AKS16050001	AKS16080001	AKS16100001	AKS1615001	N/A
40	AKS16000002	AKS16050002	AKS16080002	AKS16100002	AKS1615002	N/A
50	AKS16000003	AKS16050003	AKS16080003	AKS16100003	AKS1615003	AKS16200003

Applications

Smoke Ventilation

Natural Ventilation

Accreditations

CE Certified Complaint to applicable regulations

Twin SECO Ni 24 40

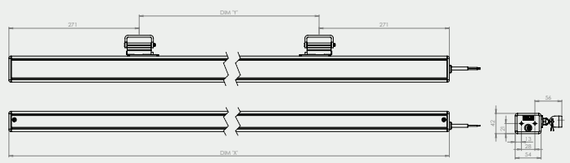
Technical Data

Actuator	Twin SECO Ni 24 40
Actuator Type	24V dc Chain Opener
Voltage (All +/-5%)	24V dc
Current Draw (Amp)	0-600mm= 1.0A 601-900mm= 1.2A
Stroke	0-600mm (configurable) 601-900mm (configurable)*
Operating Speed	15mm/sec min. 5mm/sec (configurable)
Ambient Operating Temp	-5°C to +60°C
Thrust Force	2 x 400N
Close Force	2 x 400N
Soft Close	Yes
Switching	Electronic
Standard Finish	Powder Coated Grey (RAL 9006)
Seal Relief	Programmable up to 20mm
Clamping Force	400N
Colour Option	Other RAL colours available on request
Flex Length	2M
Flex Type	2 core/0.75mm silicone 4 core (volt free contact) as option
Flex colour	Grey
Product Warranty	15,000 cycles
Dty Cycle	22% (2 mins on, 7 mins off)
Protection Degree	IP20
Bracket	Sill fixing/open inward/ face fix bracket
Synchronisation	Optional
Application	Smoke and Environmental Ventilation

Dimensions

DIM X (mm)	DIM Y (mm)	STROKE (mm)
1295.5	753.5	UP TO 600
1592.5	1050.5	601-900

Technical Drawing



Product Codes

SILVER GREY (RAL 9006)	OPERATING VOLTAGE	FORCE	STROKE
AAST1400600S	24V	2 x 400N	600mm
AAST1400900S	24V	2 x 400N	900mm

Bracket Product Codes

Height (mm)	0	5	8	10	15	20
35	AKS16000001	AKS16050001	AKS16080001	AKS16100001	AKS1615001	N/A
40	AKS16000002	AKS16050002	AKS16080002	AKS16100002	AKS1615002	N/A
50	AKS16000003	AKS16050003	AKS16080003	AKS16100003	AKS1615003	AKS16200003

Applications

Smoke Ventilation

Natural Ventilation

Accreditations

CE Certified Complaint to applicable regulations

Enquire for more details

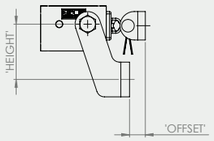
sales@commercialhardware.co.uk

SECO N 24 25

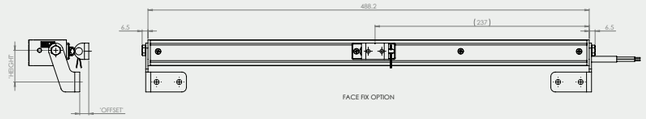
Technical Data

Actuator	SECO Ni 24 25
Actuator Type	24V dc Chain Opener
Voltage (All +/-5%)	24V dc
Current Draw (Amp)	<0.5A
Stroke	250mm, 350mm (configurable)
Operating Speed	5mm/sec (configurable) 3mm/sec (option single application only)
Ambient Operating Temp	-5°C to +60°C
Thrust Force	250N
Close Force	250N
Soft Close	Yes
Switching	Electronic
Standard Finish	Powder coated Grey (RAL 9006)
Seal Relief	Programmable up to 20mm
Clamping Force	400N
Colour Option	Other RAL colours available on request
Flex Length	2M
Flex Type	2 core PVC 4 core (volt free contact) as option
Flex colour	Grey
Product Warranty	15,000 cycles
Dty Cycle	22% (2 mins on, 7 mins off)
Protection Degree	IP20
Bracket	Sill fixing/face fix/ thru body sill
Synchronisation	Optional
Application	Environmental Ventilation

Standard Bracket Detail



Technical Drawing



Product Codes

Silver Grey (RAL 9006)	Operating Voltage	Force	Stroke
AAS0250250S	24V	250N	250mm
AAS0250350S	24V	250N	350mm

Bracket Product Codes

Height (mm)	0	5	8	10	15	20
35	AKS18000001	AKS18050001	AKS18080001	AKS18100001	AKS1815001	N/A
40	AKS18000002	AKS18050002	AKS18080002	AKS18100002	AKS1815002	N/A
50	AKS18000003	AKS18050003	AKS18080003	AKS18100003	AKS1815003	AKS18200003

Applications

Natural Ventilation

Accreditations

CE Certified Complaint to applicable regulations

For even more products visit our website

www.commercialhardware.co.uk

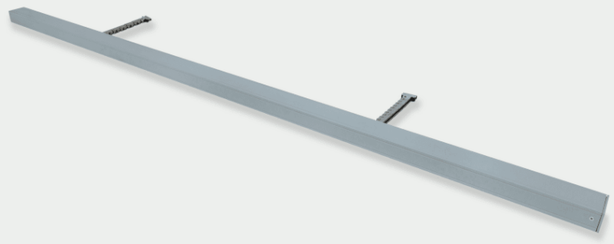
Twin SECO N 24 25

Technical Data

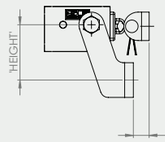
Actuator	SECO Ni 24 40
Actuator Type	24V dc Chain Opener
Voltage (All +/-5%)	24V dc
Current Draw (Amp)	0-600mm= 1.0A 601-900mm= 1.2A
Stroke	0-600mm (configurable) 601-900mm (configurable)*
Operating Speed	15mm/sec min. 5mm/sec (configurable)
Ambient Operating Temp	-5°C to +60°C
Thrust Force	400N
Close Force	400N
Soft Close	Yes
Switching	Electronic
Standard Finish	Powder coated Grey (RAL 9006)
Seal Relief	Programmable up to 20mm
Clamping Force	400N
Colour Option	Other RAL colours available on request
Flex Length	2M
Flex Type	2 core/0.75mm silicone 4 core (volt free contact) as option
Flex colour	Grey
Product Warranty	15,000 cycles
Dty Cycle	22% (2 mins on, 7 mins off)
Protection Degree	IP20
Bracket	Sill fixing/open inward/ face fix bracket
Synchronisation	Optional
Application	Smoke and Environmental Ventilation

Dimensions

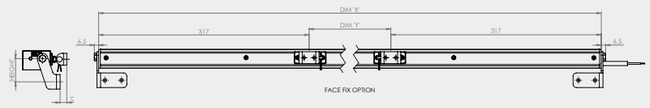
DIM X (mm)	DIM Y (mm)	STROKE (mm)
1131	497	Max. 350
1309	625	Max. 350
1359	725	Max. 350



Standard Bracket Detail



Technical Drawing



Product Codes

Silver Grey (RAL 9006)	Operating Voltage	Force	Stroke	Actuator Body Length	To Suit Vent Length
AAS0250250S	24V	250N	350mm	1131mm	1150mm
AAS0250350S	24V	250N	350mm	1309mm	1350mm
AAST252350S	24V	250N	350mm	1359mm	1450mm

Bracket Product Codes

Height (mm)	0	5	8	10	15	20
35	AKS18000001	AKS18050001	AKS18080001	AKS18100001	AKS1815001	N/A
40	AKS18000002	AKS18050002	AKS18080002	AKS18100002	AKS1815002	N/A
50	AKS18000003	AKS18050003	AKS18080003	AKS18100003	AKS1815003	AKS18200003

Applications

Natural Ventilation

Accreditations

CE Certified Complaint to applicable regulations

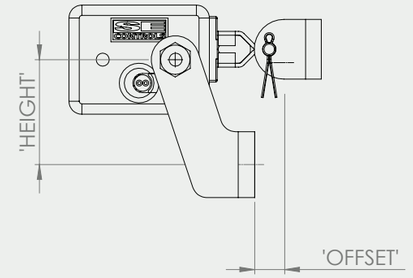
Enquire for more details

sales@commercialhardware.co.uk

Brackets

Series 40 Brackets

Face Fix Brackets For The SECO Ni 40 Actuator Range

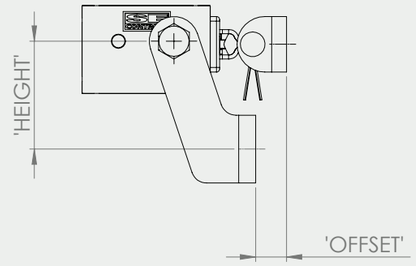


Bracket Product Codes

Height (mm)	0	5	8	10	15	20
35	AKS16000001	AKS16050001	AKS16080001	AKS16100001	AKS1615001	N/A
40	AKS16000002	AKS16050002	AKS16080002	AKS16100002	AKS1615002	N/A
50	AKS16000003	AKS16050003	AKS16080003	AKS16100003	AKS1615003	AKS16200003

Series 25 Brackets

Face Fix Brackets For The SECO N 25 Actuator Range



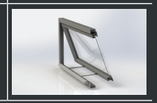
Bracket Product Codes

Height (mm)	0	5	8	10	15	20
35	AKS16000001	AKS16050001	AKS16080001	AKS16100001	AKS1615001	N/A
40	AKS16000002	AKS16050002	AKS16080002	AKS16100002	AKS1615002	N/A
50	AKS16000003	AKS16050003	AKS16080003	AKS16100003	AKS1615003	AKS16200003

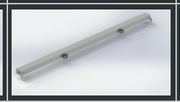
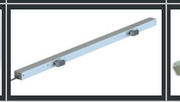
For even more products visit our website

www.commercialhardware.co.uk

Product Range

	SECO N 24 25		SECO Ni 24 40	
	Single	Twin	Single	Twin
				
Features				
Voltage	24V dc	24V dc	24V dc	24V dc
Stroke Range (mm)	up to 350	up to 350	0-600	0-600
			601-900	601-900
Configurable Stroke (0 - full stroke in mm)	Yes	Yes	Yes	Yes
Current Draw (A)	0.5	1.0		
0-600mm stroke			1.0	2.0
601-900mm stroke			1.2	2.4
Standard Operating Speed (mm/sec)	5	5	15	15
Configurable Speed	Yes	Yes	Yes	Yes
Operating / Opening Force (N)	250	250 x 2	400 (to 600mm)	400 x 2 (to 600mm)
Clamping / Locking Force (N)	4000	4000 x 2	4000	4000 x 2
Programmable Gasket / Compression Relief	Yes	Yes	Yes	Yes
Soft Close	Yes	Yes	Yes	Yes
Standard Colour	RAL 9006	RAL 9006	RAL 9006	RAL 9006
Other Colour Options	Yes	Yes	Yes	Yes
Standard Flex Length (M)	2	2	2	2
Extended Flex Lengths (M)	10 Max	10 Max	10 Max	10 Max
Product Warranty (Cycles) Self Monitored	15,000	15,000	15,000	15,000
Ventilation Type	Environmental	Environmental	Smoke & Environmental	Smoke & Environmental
Overall Product Dimensions (mm)	42x29x488	42x29x1131	54x42x635	54x42x1296
		42x29x1309	54x42x785	54x42x1593
		42x29x1359		
Handle Options				
Mini / Midi / Long Midi / Maxi				

MADE IN BRITAIN

	SECO N 25		SECO Ni 40		TGCA Locking Catch	Remote Manual Opening Chain Actuator
	Single	Twin	Single	Twin	Multi Point Locking	Manual Winding Gear
						
	230V ac	230V ac	230V ac	230V ac	24V dc	
	up to 350	up to 350	0-600	0-600	18	up to 380
	Yes	Yes	Yes	Yes	n/a	Yes
	0.12	0.25	0.25	0.5	1.8	
	5	5	15	15	3	
	Yes	Yes	Yes	Yes	No	
	250	250 x 2	400	400 x 2	Max 1200	
	4000	4000 x 2	4000	4000 x 2	3000	
	Yes	Yes	Yes	Yes		No
	Yes	Yes	Yes	Yes		No
	RAL 9006	RAL 9006	RAL 9006	RAL 9006	RAL 9006	White, Grey, Black, Brown
	Yes	Yes	Yes	Yes	Yes	No
	2	2	2	2	3	
	10 Max	10 Max	10 Max	10 Max	10 Max	
	15,000	15,000	15,000	15,000	10,000	12 months
	Environmental	Environmental	Environmental	Environmental	Smoke & Environmental	Environmental
	42x29x591	42x29x1177	54x42x635	54x42x1296	33x35x423	69x38x211
		42x29x1275				69x38x284
		42x29x1383				
						Yes

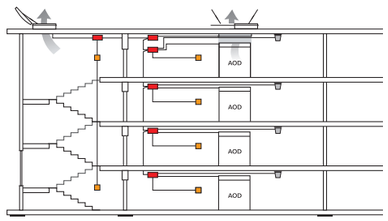
Control Systems Features and Benefits

Features	NVLogiQ PSU	OS2 Shevtec	Multi Zone PSU Panels
Smoke Ventilation	No	Yes	Yes
MCP Compliant to pr EN 12101-9	No	Yes	Yes
Compliant to EN 12101-10	No	Yes	Yes
Environmental Ventilation	Yes	Yes	Yes
Battery Back Up	No	Yes	Yes
Cycle Monitoring	Yes	Yes	Yes
Event Log	No	Yes	Yes
Zones	1	1	Up to four 8A outputs per PSU
Thermostat	No	Yes	Yes
Temperature sensor	Yes	Yes	Yes
CO2 Sensor	Yes	Yes	Yes
Open/Close Switch	Yes	Yes	Yes
Maintenance Switch	Yes	Yes	Yes
0-10V Analogue	Yes	Yes	Yes
Volt Free Contact	Yes	Yes	Yes
OSLink (Internal networking)	Yes	Yes	Yes
OSLon (External networking through LON)	No	Yes	Yes
PIR	Yes	Yes	Yes

Output Signals			
0-10V	With a Room Controller	Yes	Yes
Revised Position Feedback	No	Yes	Yes
24Vdc	Yes	Yes	Yes
Volt Free Contact (VFC) Common Fault	Yes	Yes	Yes
Volt Free COntact (VFC) Activated	No	Yes	Yes
OSLink	Yes	Yes	Yes
OSLon	No	Yes	Yes
Follow Me Command	No	Yes	Yes
Magnetic Mode	No	Yes	Yes

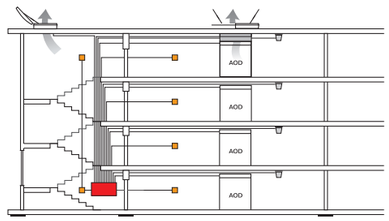
Networked Control System

230V Required For Each Networked Controller



Centralised Control System

230V Required For Each Central Control Point



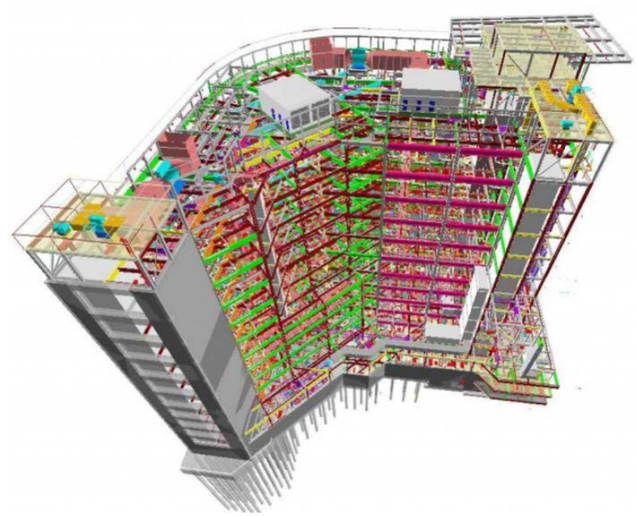
Key

- Networked Controller
- Ionisation Smoke Detector
- Central Control Point
- Manual Control Point

Building Information Modelling (BIM)

Building Information Modelling (BIM) is the generation and management of digital representations, or BIM Objects, of physical and functional characteristics of products to ensure data of the built environment is carried from design, through construction to the maintenance and operation of the building.

The Government Construction Strategy, published in 2011, announced the Government's intention to require electronic collaborative 3D BIM on centrally procured public sector projects by April 2016.
SE Controls has NBS Clauses and BIM Objects available on NBS Plus and BIM Object and at www.secontrols.com/bim



bimobject®

Generic Bottom Hung Window with SECO Ni 2440

Unique ref: SECBIM0012
Brand: SE Controls
Product Family: Windows
Product Group: Façade
Date of Publishing: 2016-05-26
Edition No. 1
Type: Assembly (multiple objects)

Tested Systems

ALUK

ALUTECH GROUP OF COMPANIES

AMS Architectural & Metal Systems

MUNSTER JOINERY

NorDan

WICONA

APA FACADE SYSTEMS

CARLSON

comar ARCHITECTURAL ALUMINIUM SYSTEMS

REHAU Unlimited Polymer Solutions

REYNAERS aluminium

RUSSELL Timber Technology Engineered to excel

deceuninck

Duraflex

eurocell All together better

SAS

SCHÜCO

SHEERLINE ALUMINIUM WINDOWS AND DOORS

Epwin window systems

KAWNEER AN ARCONIC COMPANY

DOVISTA windows and doors

smart architectural aluminium

TECHNAL

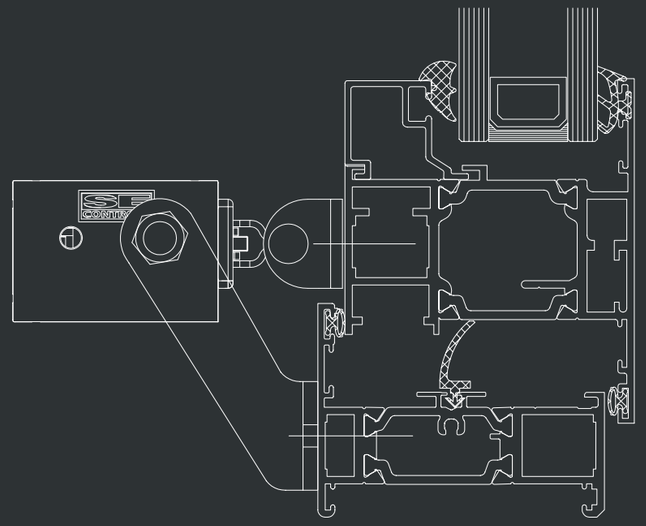
WESTCOAST WINDOWS

uniform architectural

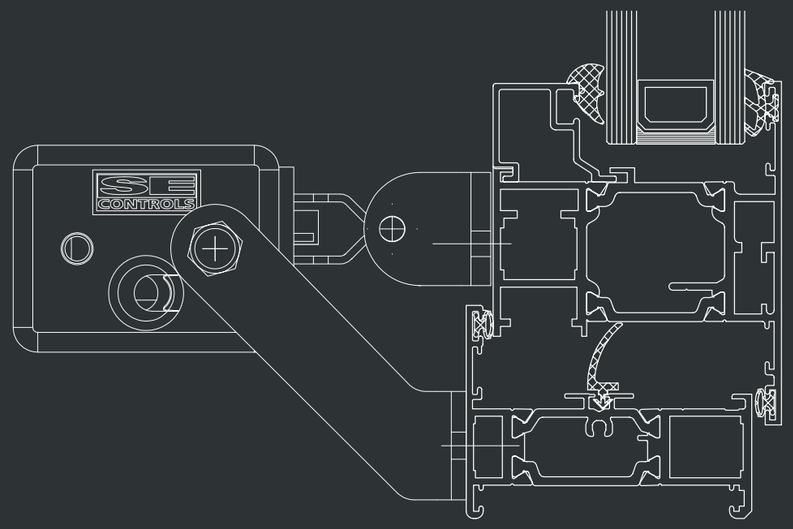
ALUPROF ALUMINIUM SYSTEMS

Metal Technology

Standard detail of SERIES 25 Actuator: 58BW



Standard detail of SERIES 40 Actuator: 58BW



Actuator Installation Details:

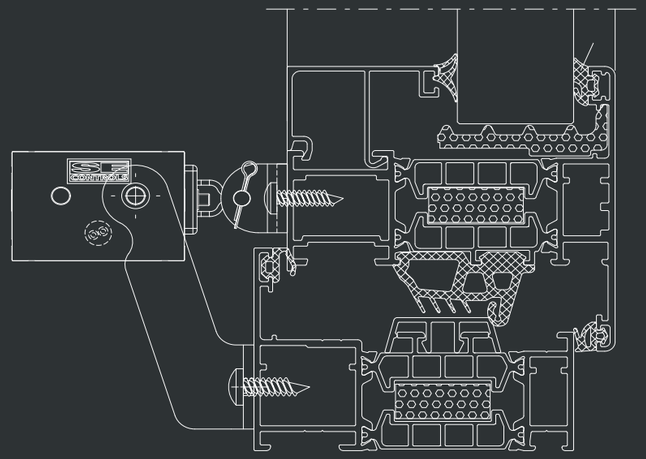
Natural Ventilation

FRAME REF NO.	OPENING VENT REF NO.	SERIES 40 BRACKET KIT NO.	SERIES 25 BRACKET KIT NO.
K5000	K5059	AKS1608003	AKS1808003
K2000 / U43630	K5059	AKS1605002	AKS1808002

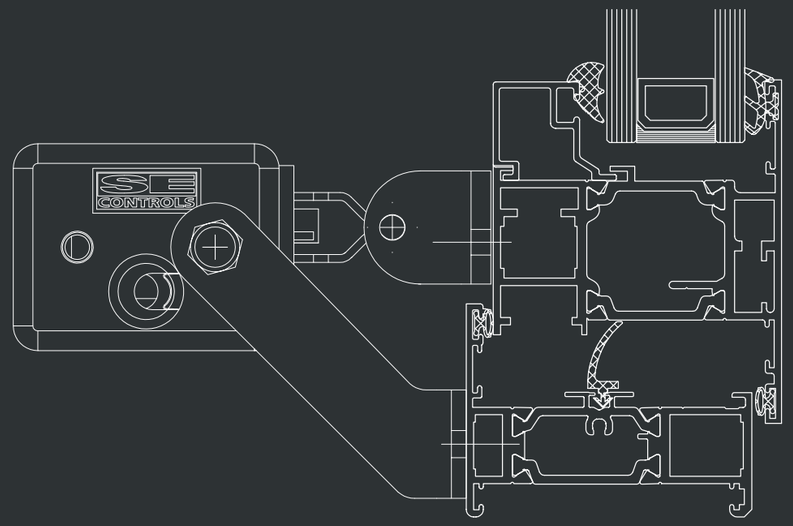
FRAME REF NO.	OPENING VENT REF NO.
K5000	K5059
K2000 / U43630	K5059

Please note; the actuators alone will not act as ‘window restrictors’. The façade contractor/fabricator should consider the installation of suitable restrictors relative to the orientation of the vent, so that stability is provided should the actuator be removed, or the vent is subjected to high external forces whilst in the open position. The restrictor should be set such that the actuator can open to it’s full stroke without being impeded ie. set 50mm past the actuator stroke length. If the vent is not fitted with a restrictor and subsequent damage occurs due to the lack of restriction SE Controls will not be liable for any replacement actuators or damage to the vent.

Standard detail of SERIES 25 Actuator: 58BW



Standard detail of SERIES 40 Actuator: 58BW

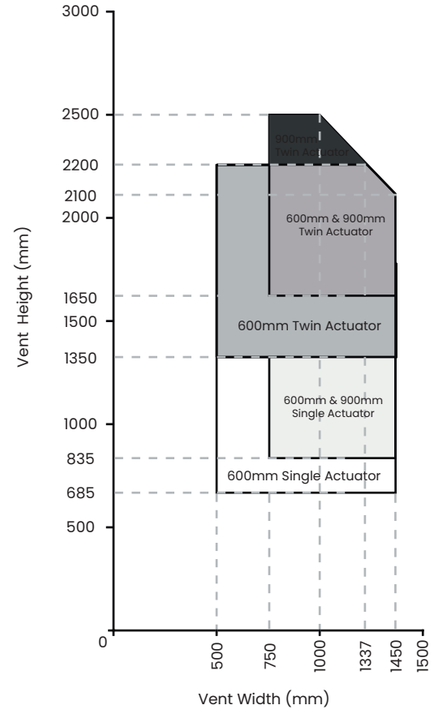


SE Controls EN12101-2 Tested Vent Parameters

Side Hung Open Out - Vertical Vents

Smoke Ventilation

Max vent area: 3.05m²
Max vent weight: 90Kg
Max vent perimeter: 7.1m
Sizes are based on using butt hinges.



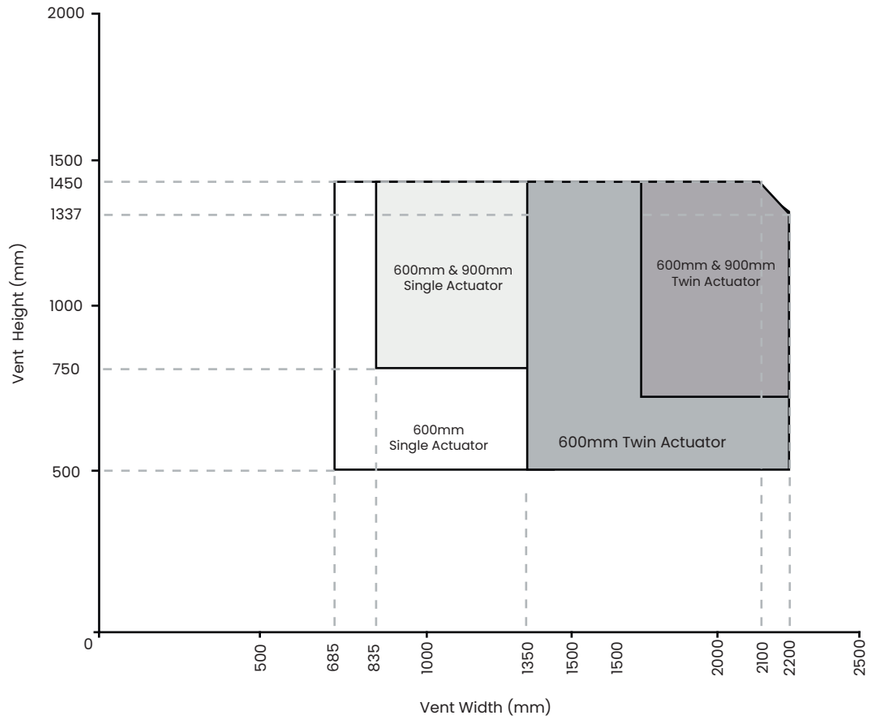
The above information indicates the size parameters that SE Controls can certify to EN12101-2:2003, aligned to the test specimens utilised. Should the vent size exceed the System Company parameters for performance, we recommend approval is sought.

SE Controls EN12101-2 Tested Vent Parameters

Bottom Hung Open Out - Vertical Vents

Smoke Ventilation

Max vent area: 3.05m²
Max vent weight: 90Kg
Max vent perimeter: 7.1m
Sizes are based on using butt hinges.



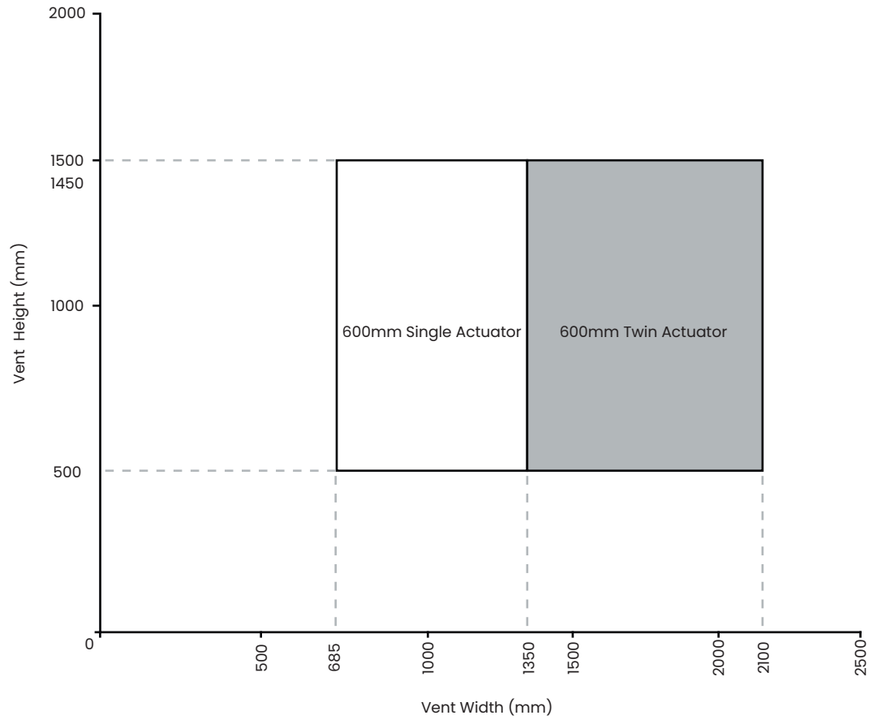
The above information indicates the size parameters that SE Controls can certify to EN12101-2:2003, aligned to the test specimens utilised. Should the vent size exceed the System Company parameters for performance, we recommend approval is sought.

SE Controls EN12101-2 Tested Vent Parameters

Top Hung Open Out - Vertical Vents

Smoke Ventilation

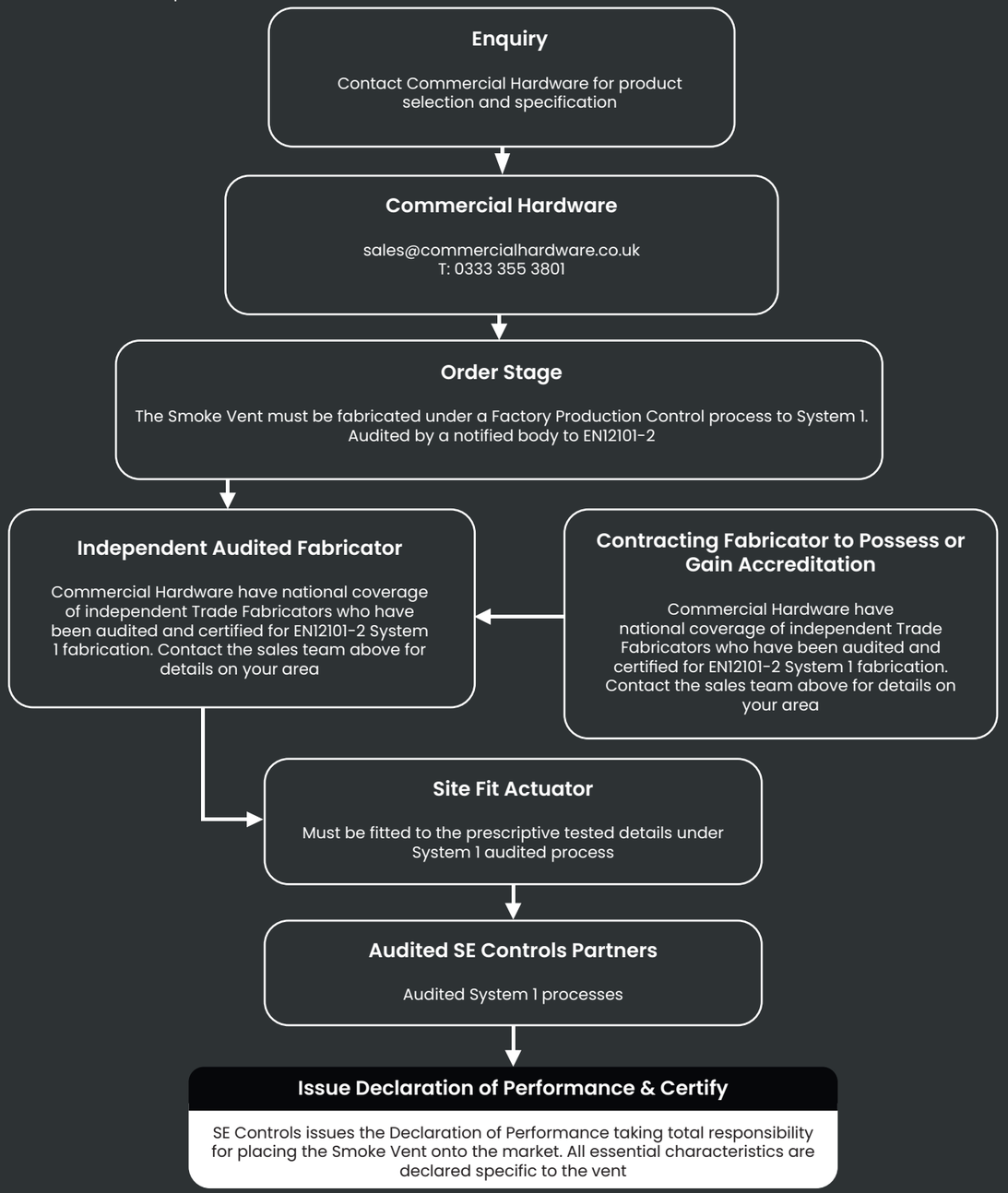
Max vent area: 3.05m²
Max vent weight: 90Kg
Max vent perimeter: 7.1m
Sizes are based on using butt hinges.



The above information indicates the size parameters that SE Controls can certify to EN12101-2:2003, aligned to the test specimens utilised. Should the vent size exceed the System Company parameters for performance, we recommend approval is sought.

Route to Compliance

EN12101-2 Smoke Vents –
'The Route to Compliance'



Selection Guide

Actuator Selection Criteria

The below considerations will assist in accurately selecting the appropriate actuator.

What façade/envelope system and vent profile reference is proposed?

What is the application?
e.g. smoke ventilation, environmental ventilation or both?

What is the building type?
e.g. High Rise Residential, Non-Residential?

Do the vents open in or open out?

Are the vents top/side/bottom hung, or pivot/parallel opening?

Is there a free area requirement? If so, is it geometric, aerodynamic or effective? Or is there a clear opening distance requirement?

Do you have detailed plan and elevation drawing?

EN12101-2 INSTALLER
Certificate

Commercial Hardware

COMMERCIAL HARDWARE

SE Controls hereby recognises the above company as an authorised, audited EN12101-2 Installer for their EN12101-2:2003 Certification scheme. They have successfully passed the required Factory Production Control process requirements to install actuators to EN12101-2 SHEV's.

This process is exclusive to SE Controls solutions, and does not allow the Installer to utilise this qualification for alternative hardware.

certification IFC

signed

21/12/2023

valid until

SE CONTROLS

EN12101-2 INSTALLER

Creating a healthier & safer environment

COMMERCIAL HARDWARE

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