



BVDAX for smoke extract in combination with a frequency inverter



With TROXNETCOM as an option



Minimum leakage with both high and low temperatures due to two-level sealing system



For mechanical smoke extract systems and pressurisation systems



Maximum performance with maximum size B = 1.20 m, H = 2.03 m

Smoke control dampers Type EK-JZ



For use in mechanical smoke extract systems, pressurisation systems, and natural smoke and heat exhaust systems, also for use as an additional supply air inlet

Rectangular smoke control dampers with ventilation function, low installation depth and large cross section for heat and smoke exhaust with mechanical smoke extract systems, for the provision of additional supply air and for use in pressurisation systems

- Nominal sizes 200 × 430 – 1200 × 2030 mm, for smoke gas flow rates of up to 87,700 m³/h or 24,360 l/s at 10 m/s
- Quick and easy installation in or on building structures, for smoke and heat exhaust, remote control with an actuator
- Casing, damper blades and actuator encasing made of temperature-resistant calcium silicate
- Pressure level 2 (operating pressure –1000 to 500 Pa)
- Automatic release (AA), option of manual override (MA)
- For smoke extract ducts from 35 mm wall thickness
- C_{10,000} = for combined smoke extract and ventilation systems
- Closed blade air leakage to EN 1751, class 3
- Casing air leakage to EN 1751, class C

Optional equipment and accessories

- Cover grille (various constructions)
- Connecting subframe for calcium silicate and sheet steel smoke extract ducts
- Integration into the central BMS with TROXNETCOM

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Application

Application

- Smoke control damper of Type EK-JZ, with CE marking and declaration of performance, for heat and smoke exhaust with mechanical smoke extract systems
- For the provision of fresh air (additional supply air) to mechanical smoke extract systems
- In pressurisation systems
- Can be used for ventilation if the mechanical smoke extract system has been certified (general building inspectorate licence) for use with combined systems
- Integration into the central BMS with TROXNETCOM

Special characteristics

- $C_{10,000}$ for combined smoke extract and ventilation systems
- Complies with the requirements of EN 12101-8
- Tested to EN 1366-2 and 1366-10 for fire

resistance properties

- Closed blade air leakage to EN 1751, class 3, and casing air leakage to EN 1751, class C
- Low sound power level and differential pressure
- Any airflow direction
- Manual release is also possible using TROXNETCOM
- Integration into the central BMS with standard bus systems
- Long-time testing to EN 1366-10 with a weight being attached to the blades, 10,000 open/close cycles

Classification

- EI 120/90 (v_{edw} , $i \leftrightarrow o$) S1000 $C_{10,000}$ MA multi

Nominal sizes

- 200 × 430 to 1200 × 2030 mm
- Casing length L = 250 mm

Description

Parts and characteristics

- Airflow direction is not critical
- Pressure level 2 (operating pressure –1000 to 500 Pa)
- For automatic and manual release
- Smoke control damper with ventilation function

Attachments 1

- Connecting subframe for calcium silicate and sheet steel smoke extract ducts
- Cover grille – crimped wire mesh or square perforated metal plate
- Cover grille – grille with straight or slanted blades

Attachments 2

- Open/Close actuators, 24 V AC/DC or 230 V AC supply voltage
- Network modules for the integration with AS-i networks
- Network modules for other standard bus systems

Useful additions

TROXNETCOM

- AES extract air and smoke extract controller X-FANS smoke exhaust fans
- Smoke exhaust fan for roof installation BVDAX/BVD
- Smoke exhaust fan for wall installation BVW/BVWAXN
- Smoke exhaust centrifugal fan BVREH/BVRA
- Smoke exhaust jet fans BVGAX/BVGAXN

All smoke exhaust fans are tested to EN 12101-3, for F200/F300/F400 and F600, depending on the type. With CE marking, declaration of performance and application approval for the German market.

Speed adjustment on smoke exhaust fans

- Certified frequency inverter unit X FAN-Control
- Safe and precise speed adjustment of smoke exhaust fans both in one-zone and in multi-zone systems.

Construction features

- Rectangular construction
- Reversible open/close actuator
- Remote control with actuator
- Suitable for the connection of cover grilles or

connecting subframes

Materials and surfaces

- Casing, damper blade and actuator encasing made of temperature-resistant calcium silicate
- Brass bearings
- Blade shafts, drive arm and external linkage made of galvanised steel

Standards and guidelines

- Construction Products Regulation
- EN 12101-8 Smoke and heat control systems – Smoke control dampers
- EN 1366-10 Fire resistance tests for service installations – Smoke control dampers
- EN 1366-2 Fire resistance tests for service installations – Fire dampers
- EN 13501-4 Fire classification of construction products and building elements using data from fire resistance tests
- EN 1751 Ventilation for buildings – Air terminal devices

Maintenance

Smoke control dampers must be operational at all

times and must be maintained regularly such that they provide the required function.

- Maintenance is required at least every 6 months
- A maintenance report must be created; documents must be kept for reference
- The functional reliability of the smoke control damper must be tested at least every six months; this has to be arranged by the owner of the smoke extract system; functional tests must be carried out in compliance with the basic maintenance principles stated in EN 13306 and DIN 31051. If two consecutive tests, one 6 months after the other, are successful, the next test can be conducted one year later
- Depending on where dampers are installed, country-specific regulations may apply.
- For details on maintenance and inspection refer to the installation and operating manual

Functional description

Smoke control dampers are used in mechanical smoke extract systems.

They are used for extracting smoke gases and for providing additional supply air to one or more fire compartments.

The dampers are made of calcium silicate panels and are opened by an encased actuator; when smoke is detected, the actuator is triggered by a signal either from a duct smoke detector or from a fire alarm system.

Smoke control dampers have two safe positions: open and closed.

In the case of fire-resistant smoke control dampers for multiple compartments, the safe

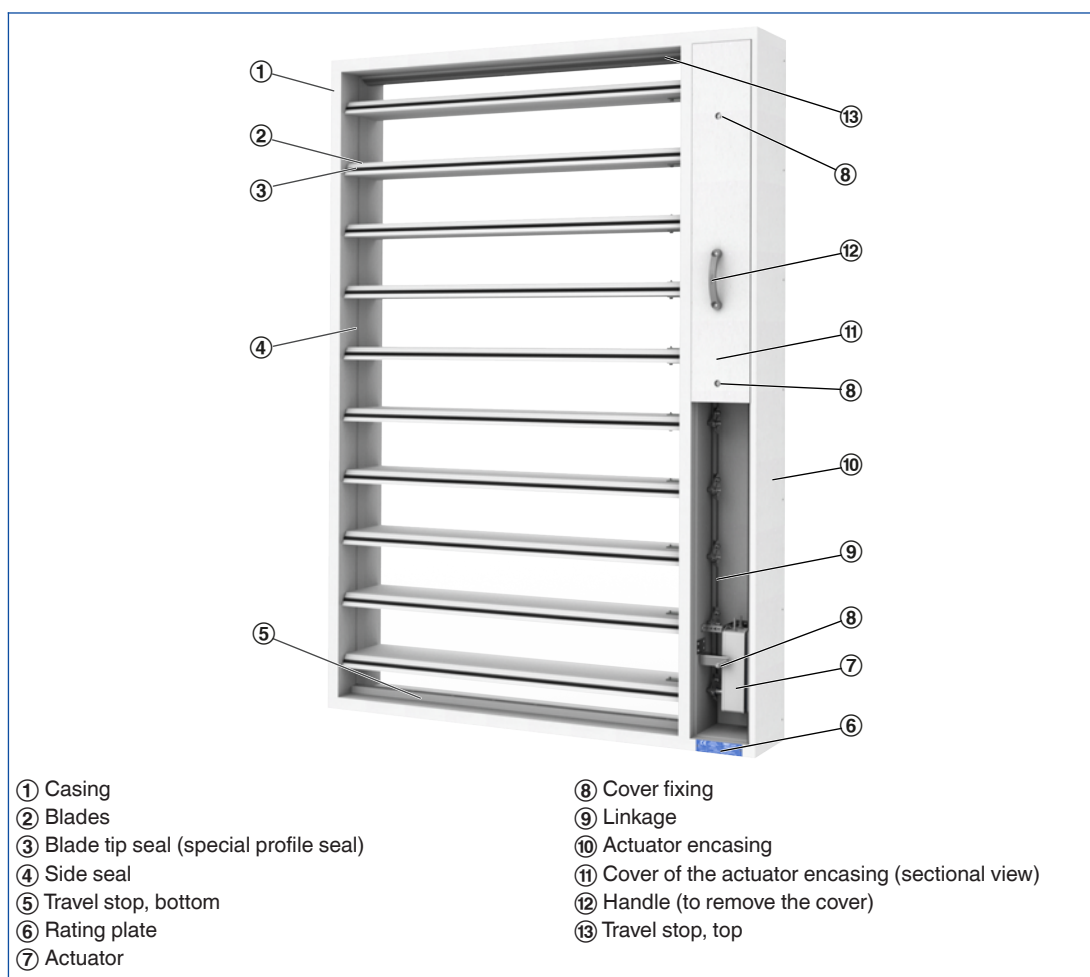
position is either 'open' or 'closed', depending on the fire site and the path of the smoke to be extracted.

If the safe position is 'open', the free area must be maintained even in the event of a fire.

The blades of EK-JZ move to the defined safe position upon receiving an automatically or manually triggered control signal. According to the specified time-temperature curve, an EK-JZ can still fully open or close after 25 minutes (MA, manual release).

Regular maintenance of the smoke control damper is required to ensure its functional reliability.

Schematic illustration of EK-JZ



| | |
|-----------------------------|--|
| Nominal sizes B x H | 200 x 430 mm – 1200 x 2030 mm |
| Casing length | 250 mm |
| Volume flow rate range | Up to 24361 l/s or up to 87700 m ³ /h |
| Differential pressure range | Pressure level 2: -1000 Pa to 500 Pa |
| Operating temperature | -30 to 50 °C; the temperature should not fall below the dew point |
| Upstream velocity* | ≤ 10 m/s with the largest size, > 10 – 15 m/s with smaller sizes; 87700 m ³ /h max. |

* Data applies to uniform upstream and downstream conditions for the smoke control damper

EK-JZ, no. of blades, free area and sound reduction index, height 430 or 630 mm

| Nominal size | | Blades | Free area | | Sound reduction index |
|--------------|-----|--------|-------------------|------------------|-----------------------|
| B | H | n | A _{free} | A _{geo} | R _w |
| mm | | – | m ² | | dB |
| 200 | 430 | 2 | 0.06 | 0.09 | 37 |
| 250 | | 2 | 0.08 | 0.11 | 36 |
| 300 | | 2 | 0.09 | 0.13 | 36 |
| 350 | | 2 | 0.11 | 0.15 | 35 |
| 400 | | 2 | 0.12 | 0.17 | 34 |
| 450 | | 2 | 0.14 | 0.19 | 34 |
| 500 | | 2 | 0.15 | 0.22 | 33 |
| 550 | | 2 | 0.17 | 0.24 | 33 |
| 600 | | 2 | 0.18 | 0.26 | 33 |
| 650 | | 2 | 0.20 | 0.28 | 32 |
| 700 | | 2 | 0.22 | 0.30 | 32 |
| 750 | | 2 | 0.23 | 0.32 | 32 |
| 800 | | 2 | 0.25 | 0.34 | 31 |
| 850 | | 2 | 0.26 | 0.37 | 31 |
| 900 | | 2 | 0.28 | 0.39 | 31 |
| 950 | | 2 | 0.29 | 0.41 | 31 |
| 1000 | | 2 | 0.31 | 0.43 | 30 |
| 1050 | | 2 | 0.32 | 0.45 | 30 |
| 1100 | 2 | 0.34 | 0.47 | 30 | |
| 1150 | 2 | 0.35 | 0.49 | 30 | |
| 1200 | 2 | 0.37 | 0.52 | 30 | |
| 200 | 630 | 3 | 0.09 | 0.13 | 36 |
| 250 | | 3 | 0.12 | 0.16 | 35 |
| 300 | | 3 | 0.14 | 0.19 | 34 |
| 350 | | 3 | 0.16 | 0.22 | 33 |
| 400 | | 3 | 0.19 | 0.25 | 33 |
| 450 | | 3 | 0.21 | 0.28 | 32 |
| 500 | | 3 | 0.23 | 0.32 | 32 |
| 550 | | 3 | 0.26 | 0.35 | 31 |
| 600 | | 3 | 0.28 | 0.38 | 31 |
| 650 | | 3 | 0.30 | 0.41 | 31 |
| 700 | | 3 | 0.33 | 0.44 | 30 |
| 750 | | 3 | 0.35 | 0.47 | 30 |
| 800 | | 3 | 0.37 | 0.50 | 30 |
| 850 | | 3 | 0.40 | 0.54 | 29 |
| 900 | | 3 | 0.42 | 0.57 | 29 |
| 950 | | 3 | 0.44 | 0.60 | 29 |
| 1000 | | 3 | 0.47 | 0.63 | 29 |
| 1050 | | 3 | 0.49 | 0.66 | 28 |
| 1100 | 3 | 0.51 | 0.69 | 28 | |
| 1150 | 3 | 0.54 | 0.72 | 28 | |
| 1200 | 3 | 0.56 | 0.76 | 28 | |

EK-JZ, no. of blades, free area and sound reduction index, height 830 and 1030 mm

| Nominal size | | Blades | Free area | | Sound reduction index |
|--------------|------|--------|-------------------|------------------|-----------------------|
| B | H | n | A _{free} | A _{geo} | R _w |
| mm | | - | m ² | | dB |
| 200 | 830 | 4 | 0.13 | 0.17 | 35 |
| 250 | | 4 | 0.16 | 0.21 | 34 |
| 300 | | 4 | 0.19 | 0.25 | 33 |
| 350 | | 4 | 0.22 | 0.29 | 32 |
| 400 | | 4 | 0.25 | 0.33 | 31 |
| 450 | | 4 | 0.28 | 0.37 | 31 |
| 500 | | 4 | 0.31 | 0.42 | 31 |
| 550 | | 4 | 0.35 | 0.46 | 30 |
| 600 | | 4 | 0.38 | 0.50 | 30 |
| 650 | | 4 | 0.41 | 0.54 | 29 |
| 700 | | 4 | 0.44 | 0.58 | 29 |
| 750 | | 4 | 0.47 | 0.62 | 29 |
| 800 | | 4 | 0.50 | 0.66 | 28 |
| 850 | | 4 | 0.53 | 0.71 | 28 |
| 900 | | 4 | 0.57 | 0.75 | 28 |
| 950 | | 4 | 0.60 | 0.79 | 28 |
| 1000 | | 4 | 0.63 | 0.83 | 27 |
| 1050 | | 4 | 0.66 | 0.87 | 27 |
| 1100 | | 4 | 0.69 | 0.91 | 27 |
| 1150 | | 4 | 0.72 | 0.95 | 27 |
| 1200 | 4 | 0.75 | 1.00 | 27 | |
| 200 | 1030 | 5 | 0.16 | 0.21 | 34 |
| 250 | | 5 | 0.20 | 0.26 | 33 |
| 300 | | 5 | 0.24 | 0.31 | 32 |
| 350 | | 5 | 0.28 | 0.36 | 31 |
| 400 | | 5 | 0.32 | 0.41 | 31 |
| 450 | | 5 | 0.35 | 0.46 | 30 |
| 500 | | 5 | 0.39 | 0.52 | 30 |
| 550 | | 5 | 0.43 | 0.57 | 29 |
| 600 | | 5 | 0.47 | 0.62 | 29 |
| 650 | | 5 | 0.51 | 0.67 | 28 |
| 700 | | 5 | 0.55 | 0.72 | 28 |
| 750 | | 5 | 0.59 | 0.77 | 28 |
| 800 | | 5 | 0.63 | 0.82 | 28 |
| 850 | | 5 | 0.67 | 0.88 | 27 |
| 900 | | 5 | 0.71 | 0.93 | 27 |
| 950 | | 5 | 0.75 | 0.98 | 27 |
| 1000 | | 5 | 0.79 | 1.03 | 27 |
| 1050 | | 5 | 0.83 | 1.08 | 26 |
| 1100 | | 5 | 0.87 | 1.13 | 26 |
| 1150 | | 5 | 0.91 | 1.18 | 26 |
| 1200 | 5 | 0.95 | 1.24 | 26 | |

EK-JZ, no. of blades, free area and sound reduction index, height 1230 and 1430 mm

| Nominal size | | Blades | Free area | | Sound reduction index |
|--------------|------|--------|-------------------|------------------|-----------------------|
| B | H | n | A _{free} | A _{geo} | R _w |
| mm | | – | m ² | | dB |
| 200 | 1230 | 6 | 0.19 | 0.25 | 33 |
| 250 | | 6 | 0.24 | 0.31 | 32 |
| 300 | | 6 | 0.28 | 0.37 | 31 |
| 350 | | 6 | 0.33 | 0.43 | 30 |
| 400 | | 6 | 0.38 | 0.49 | 30 |
| 450 | | 6 | 0.43 | 0.55 | 29 |
| 500 | | 6 | 0.47 | 0.62 | 29 |
| 550 | | 6 | 0.52 | 0.68 | 28 |
| 600 | | 6 | 0.57 | 0.74 | 28 |
| 650 | | 6 | 0.62 | 0.80 | 28 |
| 700 | | 6 | 0.66 | 0.86 | 27 |
| 750 | | 6 | 0.71 | 0.92 | 27 |
| 800 | | 6 | 0.76 | 0.98 | 27 |
| 850 | | 6 | 0.81 | 1.05 | 26 |
| 900 | | 6 | 0.85 | 1.11 | 26 |
| 950 | | 6 | 0.9 | 1.17 | 26 |
| 1000 | | 6 | 0.95 | 1.23 | 26 |
| 1050 | | 6 | 1.00 | 1.29 | 26 |
| 1100 | | 6 | 1.04 | 1.35 | 25 |
| 1150 | | 6 | 1.09 | 1.41 | 25 |
| 1200 | 6 | 1.14 | 1.48 | 25 | |
| 200 | 1430 | 7 | 0.22 | 0.29 | 32 |
| 250 | | 7 | 0.28 | 0.36 | 31 |
| 300 | | 7 | 0.33 | 0.43 | 30 |
| 350 | | 7 | 0.39 | 0.50 | 30 |
| 400 | | 7 | 0.44 | 0.57 | 29 |
| 450 | | 7 | 0.50 | 0.64 | 29 |
| 500 | | 7 | 0.55 | 0.72 | 28 |
| 550 | | 7 | 0.61 | 0.79 | 28 |
| 600 | | 7 | 0.66 | 0.86 | 27 |
| 650 | | 7 | 0.72 | 0.93 | 27 |
| 700 | | 7 | 0.78 | 1.00 | 27 |
| 750 | | 7 | 0.83 | 1.07 | 26 |
| 800 | | 7 | 0.89 | 1.14 | 26 |
| 850 | | 7 | 0.94 | 1.22 | 26 |
| 900 | | 7 | 1.00 | 1.29 | 26 |
| 950 | | 7 | 1.05 | 1.36 | 25 |
| 1000 | | 7 | 1.11 | 1.43 | 25 |
| 1050 | | 7 | 1.16 | 1.50 | 25 |
| 1100 | | 7 | 1.22 | 1.57 | 25 |
| 1150 | | 7 | 1.27 | 1.64 | 25 |
| 1200 | 7 | 1.33 | 1.72 | 24 | |

EK-JZ, no. of blades, free area and sound reduction index, height 1630 to 1830 mm

| Nominal size | | Blades | Free area | | Sound reduction index |
|--------------|------|--------|-------------------|------------------|-----------------------|
| B | H | n | A _{free} | A _{geo} | R _w |
| mm | | - | m ² | | dB |
| 200 | 1630 | 8 | 0.25 | 0.33 | 32 |
| 250 | | 8 | 0.32 | 0.41 | 31 |
| 300 | | 8 | 0.38 | 0.49 | 30 |
| 350 | | 8 | 0.44 | 0.57 | 29 |
| 400 | | 8 | 0.51 | 0.65 | 29 |
| 450 | | 8 | 0.57 | 0.73 | 28 |
| 500 | | 8 | 0.63 | 0.82 | 28 |
| 550 | | 8 | 0.70 | 0.90 | 27 |
| 600 | | 8 | 0.76 | 0.98 | 27 |
| 650 | | 8 | 0.82 | 1.06 | 26 |
| 700 | | 8 | 0.89 | 1.14 | 26 |
| 750 | | 8 | 0.95 | 1.22 | 26 |
| 800 | | 8 | 1.01 | 1.30 | 26 |
| 850 | | 8 | 1.08 | 1.39 | 25 |
| 900 | | 8 | 1.14 | 1.47 | 25 |
| 950 | | 8 | 1.20 | 1.55 | 25 |
| 1000 | 8 | 1.27 | 1.63 | 25 | |
| 1050 | 8 | 1.33 | 1.71 | 24 | |
| 1100 | 8 | 1.39 | 1.79 | 24 | |
| 1150 | 8 | 1.46 | 1.87 | 24 | |
| 1200 | 8 | 1.52 | 1.96 | 24 | |
| 200 | 1830 | 9 | 0.29 | 0.37 | 31 |
| 250 | | 9 | 0.36 | 0.46 | 30 |
| 300 | | 9 | 0.43 | 0.55 | 29 |
| 350 | | 9 | 0.50 | 0.64 | 29 |
| 400 | | 9 | 0.57 | 0.73 | 28 |
| 450 | | 9 | 0.64 | 0.82 | 28 |
| 500 | | 9 | 0.71 | 0.92 | 27 |
| 550 | | 9 | 0.79 | 1.01 | 27 |
| 600 | | 9 | 0.86 | 1.10 | 26 |
| 650 | | 9 | 0.93 | 1.19 | 26 |
| 700 | | 9 | 1.00 | 1.28 | 26 |
| 750 | | 9 | 1.07 | 1.37 | 25 |
| 800 | | 9 | 1.14 | 1.46 | 25 |
| 850 | | 9 | 1.21 | 1.56 | 25 |
| 900 | | 9 | 1.29 | 1.65 | 25 |
| 950 | | 9 | 1.36 | 1.74 | 24 |
| 1000 | 9 | 1.43 | 1.83 | 24 | |
| 1050 | 9 | 1.50 | 1.92 | 24 | |
| 1100 | 9 | 1.57 | 2.01 | 24 | |
| 1150 | 9 | 1.64 | 2.10 | 23 | |
| 1200 | 9 | 1.71 | 2.20 | 23 | |

EK-JZ, no. of blades, free area and sound reduction index, height 2030 mm

| Nominal size | | Blades | Free area | | Sound reduction index |
|--------------|------|--------|-------------------|------------------|-----------------------|
| B | H | n | A _{free} | A _{geo} | R _w |
| mm | | – | m ² | | dB |
| 200 | 2030 | 10 | 0.32 | 0.41 | 31 |
| 250 | | 10 | 0.40 | 0.51 | 30 |
| 300 | | 10 | 0.48 | 0.61 | 29 |
| 350 | | 10 | 0.56 | 0.71 | 28 |
| 400 | | 10 | 0.64 | 0.81 | 28 |
| 450 | | 10 | 0.71 | 0.91 | 27 |
| 500 | | 10 | 0.79 | 1.02 | 27 |
| 550 | | 10 | 0.87 | 1.12 | 26 |
| 600 | | 10 | 0.95 | 1.22 | 26 |
| 650 | | 10 | 1.03 | 1.32 | 25 |
| 700 | | 10 | 1.11 | 1.42 | 25 |
| 750 | | 10 | 1.19 | 1.52 | 25 |
| 800 | | 10 | 1.27 | 1.62 | 25 |
| 850 | | 10 | 1.35 | 1.73 | 24 |
| 900 | | 10 | 1.43 | 1.83 | 24 |
| 950 | | 10 | 1.51 | 1.93 | 24 |
| 1000 | | 10 | 1.59 | 2.03 | 24 |
| 1050 | 10 | 1.67 | 2.13 | 23 | |
| 1100 | 10 | 1.75 | 2.23 | 23 | |
| 1150 | 10 | 1.83 | 2.33 | 23 | |
| 1200 | 10 | 1.91 | 2.44 | 23 | |

- Quick sizing tables provide a good overview of the volume flow rates for different airflow velocities as well as of differential pressures
- The differential pressures shown apply to smoke control dampers without a cover grille, installation type C
- Differential pressures for smoke control dampers with a cover grille or for other installation types can be calculated with a correction factor
- Precise values based on project-specific data can be determined with our Easy Product Finder design software
- You will find the Easy Product Finder on our website

EK-JZ, volume flow rates and differential pressures, height 430 or 630 mm

| Nominal size | | 2.5 m/s | | | 5 m/s | | | 10 m/s | | |
|--------------|------|-----------|-------------------|--------------|-----------|-------------------|--------------|-----------|-------------------|--------------|
| B | H | \dot{V} | | Δp_t | \dot{V} | | Δp_t | \dot{V} | | Δp_t |
| mm | | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa |
| 200 | 430 | 215 | 774 | 4 | 430 | 1548 | 18 | 860 | 3096 | 71 |
| 250 | | 269 | 968 | 4 | 538 | 1935 | 17 | 1075 | 3870 | 68 |
| 300 | | 323 | 1161 | 4 | 645 | 2322 | 17 | 1290 | 4644 | 66 |
| 350 | | 376 | 1355 | 4 | 753 | 2709 | 16 | 1505 | 5418 | 65 |
| 400 | | 430 | 1548 | 4 | 860 | 3096 | 16 | 1720 | 6192 | 63 |
| 450 | | 484 | 1742 | 4 | 968 | 3483 | 15 | 1935 | 6966 | 62 |
| 500 | | 538 | 1935 | 4 | 1075 | 3870 | 15 | 2150 | 7740 | 61 |
| 550 | | 591 | 2129 | 4 | 1183 | 4257 | 15 | 2365 | 8514 | 60 |
| 600 | | 645 | 2322 | 4 | 1290 | 4644 | 15 | 2580 | 9288 | 59 |
| 650 | | 699 | 2516 | 4 | 1398 | 5031 | 15 | 2795 | 10062 | 58 |
| 700 | | 753 | 2709 | 4 | 1505 | 5418 | 14 | 3010 | 10836 | 58 |
| 750 | | 806 | 2903 | 4 | 1613 | 5805 | 14 | 3225 | 11610 | 57 |
| 800 | | 860 | 3096 | 4 | 1720 | 6192 | 14 | 3440 | 12384 | 56 |
| 850 | | 914 | 3290 | 3 | 1828 | 6579 | 14 | 3655 | 13158 | 56 |
| 900 | | 968 | 3483 | 3 | 1935 | 6966 | 14 | 3870 | 13932 | 55 |
| 950 | | 1021 | 3677 | 3 | 2043 | 7353 | 14 | 4085 | 14706 | 55 |
| 1000 | | 1075 | 3870 | 3 | 2150 | 7740 | 14 | 4300 | 15480 | 54 |
| 1050 | | 1129 | 4064 | 3 | 2258 | 8127 | 13 | 4515 | 16254 | 54 |
| 1100 | 1183 | 4257 | 3 | 2365 | 8514 | 13 | 4730 | 17028 | 53 | |
| 1150 | 1236 | 4451 | 3 | 2473 | 8901 | 13 | 4945 | 17802 | 53 | |
| 1200 | 1290 | 4644 | 3 | 2580 | 9288 | 13 | 5160 | 18576 | 52 | |
| 200 | 630 | 315 | 1134 | 4 | 630 | 2268 | 17 | 1260 | 4536 | 66 |
| 250 | | 394 | 1418 | 4 | 788 | 2835 | 16 | 1575 | 5670 | 64 |
| 300 | | 473 | 1701 | 4 | 945 | 3402 | 15 | 1890 | 6804 | 62 |
| 350 | | 551 | 1985 | 4 | 1103 | 3969 | 15 | 2205 | 7938 | 60 |
| 400 | | 630 | 2268 | 4 | 1260 | 4536 | 15 | 2520 | 9072 | 59 |
| 450 | | 709 | 2552 | 4 | 1418 | 5103 | 14 | 2835 | 10206 | 58 |
| 500 | | 788 | 2835 | 4 | 1575 | 5670 | 14 | 3150 | 11340 | 57 |
| 550 | | 866 | 3119 | 3 | 1733 | 6237 | 14 | 3465 | 12474 | 56 |
| 600 | | 945 | 3402 | 3 | 1890 | 6804 | 14 | 3780 | 13608 | 55 |
| 650 | | 1024 | 3686 | 3 | 2048 | 7371 | 14 | 4095 | 14742 | 54 |
| 700 | | 1103 | 3969 | 3 | 2205 | 7938 | 13 | 4410 | 15876 | 54 |
| 750 | | 1181 | 4253 | 3 | 2363 | 8505 | 13 | 4725 | 17010 | 53 |
| 800 | | 1260 | 4536 | 3 | 2520 | 9072 | 13 | 5040 | 18144 | 52 |
| 850 | | 1339 | 4820 | 3 | 2678 | 9639 | 13 | 5355 | 19278 | 52 |
| 900 | | 1418 | 5103 | 3 | 2835 | 10206 | 13 | 5670 | 20412 | 51 |
| 950 | | 1496 | 5387 | 3 | 2993 | 10773 | 13 | 5985 | 21546 | 51 |
| 1000 | | 1575 | 5670 | 3 | 3150 | 11340 | 13 | 6300 | 22680 | 50 |
| 1050 | | 1654 | 5954 | 3 | 3308 | 11907 | 12 | 6615 | 23814 | 50 |
| 1100 | 1733 | 6237 | 3 | 3465 | 12474 | 12 | 6930 | 24948 | 50 | |
| 1150 | 1811 | 6521 | 3 | 3623 | 13041 | 12 | 7245 | 26082 | 49 | |
| 1200 | 1890 | 6804 | 3 | 3780 | 13608 | 12 | 7560 | 27216 | 49 | |

Smoke extract, no cover grille (installation type C)

EK-JZ, volume flow rates and differential pressures, height 830 or 1030 mm

| Nominal size | | 2.5 m/s | | | 5 m/s | | | 10 m/s | | |
|--------------|------|-----------|-------------------|--------------|-----------|-------------------|--------------|-----------|-------------------|--------------|
| B | H | \dot{V} | | Δp_t | \dot{V} | | Δp_t | \dot{V} | | Δp_t |
| mm | | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa |
| 200 | 830 | 415 | 1494 | 4 | 830 | 2988 | 16 | 1660 | 5976 | 63 |
| 250 | | 519 | 1868 | 4 | 1038 | 3735 | 15 | 2075 | 7470 | 61 |
| 300 | | 623 | 2241 | 4 | 1245 | 4482 | 15 | 2490 | 8964 | 59 |
| 350 | | 726 | 2615 | 4 | 1453 | 5229 | 14 | 2905 | 10458 | 57 |
| 400 | | 830 | 2988 | 4 | 1660 | 5976 | 14 | 3320 | 11952 | 56 |
| 450 | | 934 | 3362 | 3 | 1868 | 6723 | 14 | 3735 | 13446 | 55 |
| 500 | | 1038 | 3735 | 3 | 2075 | 7470 | 13 | 4150 | 14940 | 54 |
| 550 | | 1141 | 4109 | 3 | 2283 | 8217 | 13 | 4565 | 16434 | 53 |
| 600 | | 1245 | 4482 | 3 | 2490 | 8964 | 13 | 4980 | 17928 | 52 |
| 650 | | 1349 | 4856 | 3 | 2698 | 9711 | 13 | 5395 | 19422 | 52 |
| 700 | | 1453 | 5229 | 3 | 2905 | 10458 | 13 | 5810 | 20916 | 51 |
| 750 | | 1556 | 5603 | 3 | 3113 | 11205 | 13 | 6225 | 22410 | 50 |
| 800 | | 1660 | 5976 | 3 | 3320 | 11952 | 12 | 6640 | 23904 | 50 |
| 850 | | 1764 | 6350 | 3 | 3528 | 12699 | 12 | 7055 | 25398 | 49 |
| 900 | | 1868 | 6723 | 3 | 3735 | 13446 | 12 | 7470 | 26892 | 49 |
| 950 | | 1971 | 7097 | 3 | 3943 | 14193 | 12 | 7885 | 28386 | 48 |
| 1000 | | 2075 | 7470 | 3 | 4150 | 14940 | 12 | 8300 | 29880 | 48 |
| 1050 | | 2179 | 7844 | 3 | 4358 | 15687 | 12 | 8715 | 31374 | 47 |
| 1100 | | 2283 | 8217 | 3 | 4565 | 16434 | 12 | 9130 | 32868 | 47 |
| 1150 | | 2386 | 8591 | 3 | 4773 | 17181 | 12 | 9545 | 34362 | 47 |
| 1200 | 2490 | 8964 | 3 | 4980 | 17928 | 12 | 9960 | 35856 | 46 | |
| 200 | 1030 | 515 | 1854 | 4 | 1030 | 3708 | 15 | 2060 | 7416 | 61 |
| 250 | | 644 | 2318 | 4 | 1288 | 4635 | 15 | 2575 | 9270 | 58 |
| 300 | | 773 | 2781 | 4 | 1545 | 5562 | 14 | 3090 | 11124 | 57 |
| 350 | | 901 | 3245 | 3 | 1803 | 6489 | 14 | 3605 | 12978 | 55 |
| 400 | | 1030 | 3708 | 3 | 2060 | 7416 | 13 | 4120 | 14832 | 54 |
| 450 | | 1159 | 4172 | 3 | 2318 | 8343 | 13 | 4635 | 16686 | 53 |
| 500 | | 1288 | 4635 | 3 | 2575 | 9270 | 13 | 5150 | 18540 | 52 |
| 550 | | 1416 | 5099 | 3 | 2833 | 10197 | 13 | 5665 | 20394 | 51 |
| 600 | | 1545 | 5562 | 3 | 3090 | 11124 | 13 | 6180 | 22248 | 50 |
| 650 | | 1674 | 6026 | 3 | 3348 | 12051 | 12 | 6695 | 24102 | 50 |
| 700 | | 1803 | 6489 | 3 | 3605 | 12978 | 12 | 7210 | 25956 | 49 |
| 750 | | 1931 | 6953 | 3 | 3863 | 13905 | 12 | 7725 | 27810 | 48 |
| 800 | | 2060 | 7416 | 3 | 4120 | 14832 | 12 | 8240 | 29664 | 48 |
| 850 | | 2189 | 7880 | 3 | 4378 | 15759 | 12 | 8755 | 31518 | 47 |
| 900 | | 2318 | 8343 | 3 | 4635 | 16686 | 12 | 9270 | 33372 | 47 |
| 950 | | 2446 | 8807 | 3 | 4893 | 17613 | 12 | 9785 | 35226 | 46 |
| 1000 | | 2575 | 9270 | 3 | 5150 | 18540 | 12 | 10300 | 37080 | 46 |
| 1050 | | 2704 | 9734 | 3 | 5408 | 19467 | 11 | 10815 | 38934 | 46 |
| 1100 | | 2833 | 10197 | 3 | 5665 | 20394 | 11 | 11330 | 40788 | 45 |
| 1150 | | 2961 | 10661 | 3 | 5923 | 21321 | 11 | 11845 | 42642 | 45 |
| 1200 | 3090 | 11124 | 3 | 6180 | 22248 | 11 | 12360 | 44496 | 45 | |

Smoke extract, no cover grille (installation type C)

EK-JZ, volume flow rates and differential pressures, height 1230 or 1430 mm

| Nominal size | | 2.5 m/s | | | 5 m/s | | | 10 m/s | | |
|--------------|------|-----------|-------------------|--------------|-----------|-------------------|--------------|-----------|-------------------|--------------|
| B | H | \dot{V} | | Δp_t | \dot{V} | | Δp_t | \dot{V} | | Δp_t |
| mm | | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa |
| 200 | 1230 | 615 | 2214 | 4 | 1230 | 4428 | 15 | 2460 | 8856 | 59 |
| 250 | | 769 | 2768 | 4 | 1538 | 5535 | 14 | 3075 | 11070 | 57 |
| 300 | | 923 | 3321 | 3 | 1845 | 6642 | 14 | 3690 | 13284 | 55 |
| 350 | | 1076 | 3875 | 3 | 2153 | 7749 | 13 | 4305 | 15498 | 53 |
| 400 | | 1230 | 4428 | 3 | 2460 | 8856 | 13 | 4920 | 17712 | 52 |
| 450 | | 1384 | 4982 | 3 | 2768 | 9963 | 13 | 5535 | 19926 | 51 |
| 500 | | 1538 | 5535 | 3 | 3075 | 11070 | 13 | 6150 | 22140 | 50 |
| 550 | | 1691 | 6089 | 3 | 3383 | 12177 | 12 | 6765 | 24354 | 49 |
| 600 | | 1845 | 6642 | 3 | 3690 | 13284 | 12 | 7380 | 26568 | 49 |
| 650 | | 1999 | 7196 | 3 | 3998 | 14391 | 12 | 7995 | 28782 | 48 |
| 700 | | 2153 | 7749 | 3 | 4305 | 15498 | 12 | 8610 | 30996 | 47 |
| 750 | | 2306 | 8303 | 3 | 4613 | 16605 | 12 | 9225 | 33210 | 47 |
| 800 | | 2460 | 8856 | 3 | 4920 | 17712 | 12 | 9840 | 35424 | 46 |
| 850 | | 2614 | 9410 | 3 | 5228 | 18819 | 11 | 10455 | 37638 | 46 |
| 900 | | 2768 | 9963 | 3 | 5535 | 19926 | 11 | 11070 | 39852 | 45 |
| 950 | | 2921 | 10517 | 3 | 5843 | 21033 | 11 | 11685 | 42066 | 45 |
| 1000 | | 3075 | 11070 | 3 | 6150 | 22140 | 11 | 12300 | 44280 | 45 |
| 1050 | | 3229 | 11624 | 3 | 6458 | 23247 | 11 | 12915 | 46494 | 44 |
| 1100 | | 3383 | 12177 | 3 | 6765 | 24354 | 11 | 13530 | 48708 | 44 |
| 1150 | | 3536 | 12731 | 3 | 7073 | 25461 | 11 | 14145 | 50922 | 43 |
| 1200 | 3690 | 13284 | 3 | 7380 | 26568 | 11 | 14760 | 53136 | 43 | |
| 200 | 1430 | 715 | 2574 | 4 | 1430 | 5148 | 14 | 2860 | 10296 | 57 |
| 250 | | 894 | 3218 | 3 | 1788 | 6435 | 14 | 3575 | 12870 | 55 |
| 300 | | 1073 | 3861 | 3 | 2145 | 7722 | 13 | 4290 | 15444 | 53 |
| 350 | | 1251 | 4505 | 3 | 2503 | 9009 | 13 | 5005 | 18018 | 52 |
| 400 | | 1430 | 5148 | 3 | 2860 | 10296 | 13 | 5720 | 20592 | 51 |
| 450 | | 1609 | 5792 | 3 | 3218 | 11583 | 12 | 6435 | 23166 | 50 |
| 500 | | 1788 | 6435 | 3 | 3575 | 12870 | 12 | 7150 | 25740 | 49 |
| 550 | | 1966 | 7079 | 3 | 3933 | 14157 | 12 | 7865 | 28314 | 48 |
| 600 | | 2145 | 7722 | 3 | 4290 | 15444 | 12 | 8580 | 30888 | 47 |
| 650 | | 2324 | 8366 | 3 | 4648 | 16731 | 12 | 9295 | 33462 | 47 |
| 700 | | 2503 | 9009 | 3 | 5005 | 18018 | 12 | 10010 | 36036 | 46 |
| 750 | | 2681 | 9653 | 3 | 5363 | 19305 | 11 | 10725 | 38610 | 46 |
| 800 | | 2860 | 10296 | 3 | 5720 | 20592 | 11 | 11440 | 41184 | 45 |
| 850 | | 3039 | 10940 | 3 | 6078 | 21879 | 11 | 12155 | 43758 | 45 |
| 900 | | 3218 | 11583 | 3 | 6435 | 23166 | 11 | 12870 | 46332 | 44 |
| 950 | | 3396 | 12227 | 3 | 6793 | 24453 | 11 | 13585 | 48906 | 44 |
| 1000 | | 3575 | 12870 | 3 | 7150 | 25740 | 11 | 14300 | 51480 | 43 |
| 1050 | | 3754 | 13514 | 3 | 7508 | 27027 | 11 | 15015 | 54054 | 43 |
| 1100 | | 3933 | 14157 | 3 | 7865 | 28314 | 11 | 15730 | 56628 | 43 |
| 1150 | | 4111 | 14801 | 3 | 8223 | 29601 | 11 | 16445 | 59202 | 42 |
| 1200 | 4290 | 15444 | 3 | 8580 | 30888 | 10 | 17160 | 61776 | 42 | |

Smoke extract, no cover grille (installation type C)

EK-JZ, volume flow rates and differential pressures, height 1630 or 1830 mm

| Nominal size | | 2.5 m/s | | | 5 m/s | | | 10 m/s | | |
|--------------|------|-----------|-------------------|--------------|-----------|-------------------|--------------|-----------|-------------------|--------------|
| B | H | \dot{V} | | Δp_t | \dot{V} | | Δp_t | \dot{V} | | Δp_t |
| mm | | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa |
| 200 | 1630 | 815 | 2934 | 3 | 1630 | 5868 | 14 | 3260 | 11736 | 56 |
| 250 | | 1019 | 3668 | 3 | 2038 | 7335 | 13 | 4075 | 14670 | 54 |
| 300 | | 1223 | 4401 | 3 | 2445 | 8802 | 13 | 4890 | 17604 | 52 |
| 350 | | 1426 | 5135 | 3 | 2853 | 10269 | 13 | 5705 | 20538 | 51 |
| 400 | | 1630 | 5868 | 3 | 3260 | 11736 | 12 | 6520 | 23472 | 50 |
| 450 | | 1834 | 6602 | 3 | 3668 | 13203 | 12 | 7335 | 26406 | 49 |
| 500 | | 2038 | 7335 | 3 | 4075 | 14670 | 12 | 8150 | 29340 | 48 |
| 550 | | 2241 | 8069 | 3 | 4483 | 16137 | 12 | 8965 | 32274 | 47 |
| 600 | | 2445 | 8802 | 3 | 4890 | 17604 | 12 | 9780 | 35208 | 46 |
| 650 | | 2649 | 9536 | 3 | 5298 | 19071 | 11 | 10595 | 38142 | 46 |
| 700 | | 2853 | 10269 | 3 | 5705 | 20538 | 11 | 11410 | 41076 | 45 |
| 750 | | 3056 | 11003 | 3 | 6113 | 22005 | 11 | 12225 | 44010 | 45 |
| 800 | | 3260 | 11736 | 3 | 6520 | 23472 | 11 | 13040 | 46944 | 44 |
| 850 | | 3464 | 12470 | 3 | 6928 | 24939 | 11 | 13855 | 49878 | 44 |
| 900 | | 3668 | 13203 | 3 | 7335 | 26406 | 11 | 14670 | 52812 | 43 |
| 950 | | 3871 | 13937 | 3 | 7743 | 27873 | 11 | 15485 | 55746 | 43 |
| 1000 | | 4075 | 14670 | 3 | 8150 | 29340 | 11 | 16300 | 58680 | 42 |
| 1050 | | 4279 | 15404 | 3 | 8558 | 30807 | 10 | 17115 | 61614 | 42 |
| 1100 | | 4483 | 16137 | 3 | 8965 | 32274 | 10 | 17930 | 64548 | 42 |
| 1150 | | 4686 | 16871 | 3 | 9373 | 33741 | 10 | 18745 | 67482 | 41 |
| 1200 | 4890 | 17604 | 3 | 9780 | 35208 | 10 | 19560 | 70416 | 41 | |
| 200 | 1830 | 915 | 3294 | 3 | 1830 | 6588 | 14 | 3660 | 13176 | 55 |
| 250 | | 1144 | 4118 | 3 | 2288 | 8235 | 13 | 4575 | 16470 | 53 |
| 300 | | 1373 | 4941 | 3 | 2745 | 9882 | 13 | 5490 | 19764 | 51 |
| 350 | | 1601 | 5765 | 3 | 3203 | 11529 | 12 | 6405 | 23058 | 50 |
| 400 | | 1830 | 6588 | 3 | 3660 | 13176 | 12 | 7320 | 26352 | 49 |
| 450 | | 2059 | 7412 | 3 | 4118 | 14823 | 12 | 8235 | 29646 | 48 |
| 500 | | 2288 | 8235 | 3 | 4575 | 16470 | 12 | 9150 | 32940 | 47 |
| 550 | | 2516 | 9059 | 3 | 5033 | 18117 | 12 | 10065 | 36234 | 46 |
| 600 | | 2745 | 9882 | 3 | 5490 | 19764 | 11 | 10980 | 39528 | 45 |
| 650 | | 2974 | 10706 | 3 | 5948 | 21411 | 11 | 11895 | 42822 | 45 |
| 700 | | 3203 | 11529 | 3 | 6405 | 23058 | 11 | 12810 | 46116 | 44 |
| 750 | | 3431 | 12353 | 3 | 6863 | 24705 | 11 | 13725 | 49410 | 44 |
| 800 | | 3660 | 13176 | 3 | 7320 | 26352 | 11 | 14640 | 52704 | 43 |
| 850 | | 3889 | 14000 | 3 | 7778 | 27999 | 11 | 15555 | 55998 | 43 |
| 900 | | 4118 | 14823 | 3 | 8235 | 29646 | 11 | 16470 | 59292 | 42 |
| 950 | | 4346 | 15647 | 3 | 8693 | 31293 | 10 | 17385 | 62586 | 42 |
| 1000 | | 4575 | 16470 | 3 | 9150 | 32940 | 10 | 18300 | 65880 | 41 |
| 1050 | | 4804 | 17294 | 3 | 9608 | 34587 | 10 | 19215 | 69174 | 41 |
| 1100 | | 5033 | 18117 | 3 | 10065 | 36234 | 10 | 20130 | 72468 | 41 |
| 1150 | | 5261 | 18941 | 3 | 10523 | 37881 | 10 | 21045 | 75762 | 40 |
| 1200 | 5490 | 19764 | 3 | 10980 | 39528 | 10 | 21960 | 79056 | 40 | |

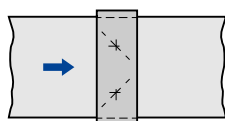
Smoke extract, no cover grille (installation type C)

EK-JZ, volume flow rates and differential pressures, height 2030 mm

| Nominal size | | 2.5 m/s | | | 5 m/s | | | 10 m/s | | |
|--------------|------|-----------|-------------------|--------------|-----------|-------------------|--------------|-----------|-------------------|--------------|
| B | H | \dot{V} | | Δp_t | \dot{V} | | Δp_t | \dot{V} | | Δp_t |
| mm | | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa | l/s | m ³ /h | Pa |
| 200 | 2030 | 1015 | 3654 | 3 | 2030 | 7308 | 13 | 4060 | 14616 | 54 |
| 250 | | 1269 | 4568 | 3 | 2538 | 9135 | 13 | 5075 | 18270 | 52 |
| 300 | | 1523 | 5481 | 3 | 3045 | 10962 | 13 | 6090 | 21924 | 50 |
| 350 | | 1776 | 6395 | 3 | 3553 | 12789 | 12 | 7105 | 25578 | 49 |
| 400 | | 2030 | 7308 | 3 | 4060 | 14616 | 12 | 8120 | 29232 | 48 |
| 450 | | 2284 | 8222 | 3 | 4568 | 16443 | 12 | 9135 | 32886 | 47 |
| 500 | | 2538 | 9135 | 3 | 5075 | 18270 | 11 | 10150 | 36540 | 46 |
| 550 | | 2791 | 10049 | 3 | 5583 | 20097 | 11 | 11165 | 40194 | 45 |
| 600 | | 3045 | 10962 | 3 | 6090 | 21924 | 11 | 12180 | 43848 | 44 |
| 650 | | 3299 | 11876 | 3 | 6598 | 23751 | 11 | 13195 | 47502 | 44 |
| 700 | | 3553 | 12789 | 3 | 7105 | 25578 | 11 | 14210 | 51156 | 43 |
| 750 | | 3806 | 13703 | 3 | 7613 | 27405 | 11 | 15225 | 54810 | 43 |
| 800 | | 4060 | 14616 | 3 | 8120 | 29232 | 11 | 16240 | 58464 | 42 |
| 850 | | 4314 | 15530 | 3 | 8628 | 31059 | 10 | 17255 | 62118 | 42 |
| 900 | | 4568 | 16443 | 3 | 9135 | 32886 | 10 | 18270 | 65772 | 41 |
| 950 | | 4821 | 17357 | 3 | 9643 | 34713 | 10 | 19285 | 69426 | 41 |
| 1000 | | 5075 | 18270 | 3 | 10150 | 36540 | 10 | 20300 | 73080 | 41 |
| 1050 | | 5329 | 19184 | 3 | 10658 | 38367 | 10 | 21315 | 76734 | 40 |
| 1100 | | 5583 | 20097 | 2 | 11165 | 40194 | 10 | 22330 | 80388 | 40 |
| 1150 | | 5836 | 21011 | 2 | 11673 | 42021 | 10 | 23345 | 84042 | 40 |
| 1200 | 6090 | 21924 | 2 | 12180 | 43848 | 10 | 24360 | 87696 | 39 | |

Smoke extract, no cover grille (installation type C)

Installation type A, for intake, correction factors

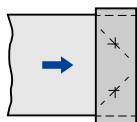


Installation type A

| EK-JZ | | Cover grille | | | | | | | |
|-------------------|------------------|--------------|------|------|------|------|------|------|------|
| A _{free} | A _{geo} | Without | A | B | C | D | E | G | H |
| m ² | | - | | | | | | | |
| 0.06 | 0.10 | 0.56 | 1.55 | 2.40 | 2.94 | 3.59 | 3.70 | 1.69 | 1.94 |
| 0.17 | 0.25 | 0.57 | 1.75 | 2.76 | 3.39 | 4.17 | 4.30 | 1.91 | 2.21 |
| 0.37 | 0.50 | 0.58 | 1.93 | 3.08 | 3.80 | 4.69 | 4.84 | 2.11 | 2.45 |
| 0.57 | 0.75 | 0.58 | 2.04 | 3.28 | 4.06 | 5.02 | 5.18 | 2.23 | 2.60 |
| 0.78 | 1.00 | 0.59 | 2.12 | 3.44 | 4.26 | 5.27 | 5.44 | 2.33 | 2.72 |
| 1.16 | 1.50 | 0.59 | 2.24 | 3.65 | 4.53 | 5.62 | 5.80 | 2.46 | 2.88 |
| 1.57 | 2.00 | 0.60 | 2.34 | 3.82 | 4.75 | 5.90 | 6.09 | 2.57 | 3.01 |
| 1.91 | 2.44 | 0.60 | 2.40 | 3.94 | 4.90 | 6.09 | 6.29 | 2.65 | 3.10 |

Installation type A, for discharge, correction factors

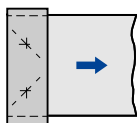
| EK-JZ | | Cover grille | | | | | | | |
|-------------------|------------------|--------------|------|------|------|------|------|------|------|
| A _{free} | A _{geo} | Without | A | B | C | D | E | G | H |
| m ² | | - | | | | | | | |
| 0.06 | 0.10 | 0.56 | 1.22 | 1.90 | 3.13 | 3.71 | 3.86 | 1.44 | 1.76 |
| 0.17 | 0.25 | 0.57 | 1.35 | 2.16 | 3.62 | 4.31 | 4.49 | 1.62 | 2.00 |
| 0.37 | 0.50 | 0.58 | 1.47 | 2.39 | 4.06 | 4.85 | 5.06 | 1.78 | 2.21 |
| 0.57 | 0.75 | 0.58 | 1.54 | 2.54 | 4.34 | 5.19 | 5.41 | 1.88 | 2.34 |
| 0.78 | 1.00 | 0.59 | 1.60 | 2.66 | 4.56 | 5.46 | 5.69 | 1.95 | 2.45 |
| 1.16 | 1.50 | 0.59 | 1.68 | 2.81 | 4.85 | 5.81 | 6.07 | 2.06 | 2.59 |
| 1.57 | 2.00 | 0.60 | 1.75 | 2.94 | 5.09 | 6.11 | 6.37 | 2.14 | 2.70 |
| 1.91 | 2.44 | 0.60 | 1.79 | 3.03 | 5.25 | 6.31 | 6.58 | 2.20 | 2.78 |



Installation type B

Installation type B, for discharge, correction factors

| EK-JZ | | Cover grille | | | | | | | | |
|-------------------|------|--------------|------|------|------|------|------|------|------|--|
| A _{free} | geo | Without | A | B | C | D | E | G | H | |
| m ² | | - | | | | | | | | |
| 0.06 | 0.10 | 2.14 | 2.33 | 2.58 | 3.30 | 3.83 | 4.02 | 2.21 | 2.41 | |
| 0.17 | 0.25 | 2.25 | 2.46 | 2.85 | 3.79 | 4.41 | 4.64 | 2.35 | 2.58 | |
| 0.37 | 0.50 | 2.35 | 2.57 | 3.08 | 4.22 | 4.92 | 5.19 | 2.46 | 2.71 | |
| 0.57 | 0.75 | 2.40 | 2.64 | 3.21 | 4.49 | 5.23 | 5.52 | 2.53 | 2.79 | |
| 0.78 | 1.00 | 2.44 | 2.68 | 3.32 | 4.69 | 5.47 | 5.78 | 2.58 | 2.85 | |
| 1.16 | 1.50 | 2.49 | 2.74 | 3.45 | 4.96 | 5.79 | 6.12 | 2.64 | 2.92 | |
| 1.57 | 2.00 | 2.53 | 2.79 | 3.56 | 5.18 | 6.05 | 6.40 | 2.69 | 2.98 | |
| 1.91 | 2.44 | 2.56 | 2.82 | 3.63 | 5.33 | 6.22 | 6.59 | 2.72 | 3.02 | |



Installation type C

Installation type C, for intake, correction factors

| EK-JZ | | Cover grille | | | | | | | | |
|-------------------|------------------|--------------|------|------|------|------|------|------|------|--|
| A _{free} | A _{geo} | Without | A | B | C | D | E | G | H | |
| m ² | | - | | | | | | | | |
| 0.06 | 0.10 | 1 | 1.18 | 1.80 | 2.68 | 3.18 | 3.55 | 1.62 | 1.89 | |
| 0.17 | 0.25 | 1 | 1.19 | 1.93 | 3.02 | 3.61 | 4.07 | 1.72 | 2.09 | |
| 0.37 | 0.50 | 1 | 1.20 | 2.02 | 3.31 | 3.99 | 4.52 | 1.80 | 2.27 | |
| 0.57 | 0.75 | 1 | 1.20 | 2.08 | 3.48 | 4.22 | 4.79 | 1.85 | 2.37 | |
| 0.78 | 1.00 | 1 | 1.20 | 2.12 | 3.62 | 4.39 | 5.00 | 1.89 | 2.45 | |
| 1.16 | 1.50 | 1 | 1.20 | 2.18 | 3.79 | 4.62 | 5.28 | 1.93 | 2.56 | |
| 1.57 | 2.00 | 1 | 1.21 | 2.22 | 3.93 | 4.81 | 5.50 | 1.97 | 2.64 | |
| 1.91 | 2.44 | 1 | 1.21 | 2.25 | 4.03 | 4.93 | 5.65 | 1.99 | 2.70 | |

Sizing example 1

Given data

$\dot{V} = 1000$ l/s (3600 m³/h)
Max. height 1030 mm
Smoke extract, 2.5 m/s, smoke extract duct on one side, cover grille D (installation type C)

Quick sizing

EK-JZ/650×630, A_{free} = 0.30 m², Δp_t = 3 Pa
Correction factor for A_{free} up to 0.37 m²: 3.99
Total differential pressure for a smoke control damper with cover grille: Δp_t = 3 Pa × 3.99 = 12 Pa

EK-JZ/500×830, A_{free} = 0.31 m², Δp_t = 3 Pa
Correction factor for A_{free} up to 0.37 m²: 3.99
Total differential pressure for a smoke control damper with cover grille: Δp_t = 3 Pa × 3.99 = 12 Pa

EK-JZ/400×1030, A_{free} = 0.32 m², Δp_t = 3 Pa
Correction factor for A_{free} up to 0.37 m²: 3.99

Total differential pressure for a smoke control damper with cover grille: Δp_t = 3 Pa × 3.99 = 12 Pa

Sizing example 2

Given data

$\dot{V} = 4000$ l/s (14400 m³/h)
Max. height 1030 mm
Smoke extract, 5 m/s, smoke extract ducts on both sides, no cover grille (installation type A)

Quick sizing

EK-JZ/1000×830, A_{free} = 0.63 m², Δp_t = 12 Pa
Correction factor for A_{free} up to 0.78 m²: 0.59
Total differential pressure for smoke control damper: Δp_t = 12 Pa × 0.59 = 7 Pa

EK-JZ/800×1030, A_{free} = 0.63 m², Δp_t = 12 Pa
Correction factor for A_{free} up to 0.78 m²: 0.59
Total differential pressure for smoke control damper: Δp_t = 12 Pa × 0.59 = 7 Pa

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Rectangular or square smoke control dampers to product standard EN 12101-8, tested to EN 1366-10 and EN 1366-2, for use in smoke extract systems. Smoke control dampers are not only used for the exhaust of smoke, heat and combustion products, but also for the controlled removal of dangerous and toxic fire suppression gases.

EK-JZ smoke control dampers can also be used in pressurisation systems and as pressure relief dampers in gas fire extinguishing systems. Also for extracting smoke gases and for providing additional supply air to one or more fire compartments.

EK-JZ can be used in combined smoke exhaust systems which have been approved for controlled ventilation. The fire-resistant smoke control damper for multiple compartments is suitable for installation in and on fire-resistant smoke extract ducts and in fire-resistant standard supporting constructions. It is controlled with open/close actuators that can be combined with control modules that are factory wired and fitted inside the temperature-resistant actuator encasing.

Classification

- EI 120/90 (v_{edw} , i ↔ o) S1000 C_{10,000} MA multi

Special characteristics

- C_{10,000} for combined smoke extract and ventilation systems
- Complies with the requirements of EN 12101-8
- Tested to EN 1366-2 and 1366-10 for fire resistance properties
- Closed blade air leakage to EN 1751, class 3, and casing air leakage to EN 1751, class C
- Low sound power level and differential pressure
- Any airflow direction
- Manual release is also possible using TROXNETCOM
- Integration into the central BMS with standard bus systems
- Long-time testing to EN 1366-10 with a weight being attached to the blades, 10,000 open/close cycles

Materials and surfaces

- Casing, damper blade and actuator encasing made of temperature-resistant calcium silicate
- Brass bearings
- Blade shafts, drive arm and external linkage

made of galvanised steel

Technical data

- Nominal sizes B × H:
200 × 430 mm – 1200 × 2030 mm
- Casing length: 250 mm
- Volume flow rate range: Up to 24361 l/s or 87700 m³/h
- Differential pressure range, pressure level 2: -1000 to 500 Pa
- Operating temperature: -30 to 50 °C; the temperature should not fall below the dew point
- Upstream velocity*: ≤ 10 m/s with the largest size, > 10 – 15 m/s with smaller sizes; 87700 m³/h max.

* Data applies to uniform upstream and downstream conditions for the smoke control damper

Attachments

Connecting subframe and cover grille for the operating side and/or installation side.

- Connecting subframe for calcium silicate and sheet steel smoke extract ducts
- Cover grille – crimped wire mesh or square perforated metal plate
- Cover grille – external weather louvre or ventilation grille

Open/Close actuators for the control of smoke control dampers, with automatic (AA) or manual release (MA).

Optional control or communication module for integration with the central BMS.

- Supply voltage 24 V AC/DC or 230 V AC
- Limit switches for capturing the end positions OPEN and CLOSED
- Override control for up to 25 minutes
- Module for the control of smoke control dampers (optional)
- Indicator lights for indicating the damper blade position
- Monitoring of signal reception

Sizing data

- \dot{V} _____
[m³/h]
 - Δp_{st} _____
[Pa]
- Air-regenerated noise
- L_{PA} _____
[dB(A)]

EK-JZ

| | | | | | |
|---|----------|----------|----------|----------|----------|
| EK-JZ – R / DE / 1200x2030x250 / A0 / B24A | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 |

1 Type

EK-JZ Smoke control damper

2 Actuator encasing as seen from the operating side

R On the right (as standard)

3 Country of destination

DE Germany
Other destination countries upon request

4 Nominal size [mm]

B × H × L

5 Attachments 1

No entry: none
F0, 0F, FF Connecting subframe, galvanised steel

Cover grille
A0, 0A, AA Crimped wire mesh, 20 × 20, galvanised steel
B0, 0B, BB Square perforated metal plate, 10 × 10, galvanised steel
C0, 0C, CC Grille with slanted blades, aluminium
D0, 0D, DD Grille with slanted blades, aluminium, additionally with crimped wire mesh, 20 × 20, galvanised steel
E0, 0E, EE Grille with slanted blades, aluminium, additionally with welded wire mesh, 6 × 6, galvanised steel
G0, 0G, GG Grille with straight blades, aluminium, blade pitch 25 mm
H0, 0H, HH Grille with straight blades, aluminium, blade pitch 16.7 mm
The first character refers to the operating side, the second character refers to the installation side
e.g. FA: Connecting subframe on the operating side, crimped wire mesh on the installation side

Any combination is possible

Order example: EK-JZ-R/DE/800x1030x250/A0/B24A

| | |
|-------------------------------|--|
| Actuator encasing | Operating side, on the right |
| Country of destination | Germany |
| Nominal size | 800 × 1030 × 250 mm |
| Attachment 1 | Cover grille on the operating side |
| Attachment 2 | 24 V AC/DC with TROXNETCOM control module AS-EM/EK |

6 Attachments 2

Belimo actuators
B24 BE 24-12; BLE 24-12, 24 V AC/DC
B230 BE 230-12; BLE 230-12, 230 V AC
Combinations of actuator and control module
B24A BE 24-12 / BLE 24-12, with AS-EM/EK, 30 V DC (AS-i)
B24AS BE24-12 / BLE 24-12, with AS-EM/SIL2, 30 V DC (AS-i)
B24BKNE BE 24-12 / BLE 24-12, with BKNE230-24
B24C BE 24-12 / BLE24-12, with BC24
B24D BE 24-12 / BLE 24-12, with BRM-10-F-ST
B230D BE 230-12 / BLE 230-12, with BRM-10-F

F, A, B, C, D, E, G, H – Connecting subframes and cover grilles

also be ordered separately

Application

- A connecting subframe (F) is required for sheet steel smoke extract ducts
- Cover grilles are attached to the damper or to the end of ducts; this application has been approved based on a fire test to EN 1366-10
- The cover grille free area is approx. 80% for crimped wire mesh (A) and approx. 70% for perforated metal plates
- Cover grille variants C, D, E, G, H cover the blades of EK-JZ but not the actuator encasing
- If you order a cover grille separately, you may choose a size that covers the damper blades and the actuator encasing and fix the grille along the perimeter of the shaft wall
- Connecting subframes and cover grilles are factory mounted to the dampers
- Connecting subframes and cover grilles may

Materials and surfaces

- F: Connecting subframe made of galvanised sheet steel

Cover grilles

- A: Crimped wire mesh made of galvanised steel
- B: Perforated metal plate made of galvanised sheet steel
- C: Grille with slanted blades made of aluminium
- D: Grille with slanted blades made of aluminium, crimped wire mesh made of galvanised steel
- E: Grille with slanted blades made of aluminium, welded wire mesh made of galvanised steel
- G, H: Grille with straight blades made of aluminium

Connecting subframes and cover grilles

| Operating side | Installation side | Order code |
|---------------------|---------------------|------------|
| Connecting subframe | - | F0 |
| - | Connecting subframe | 0F |
| Connecting subframe | Connecting subframe | FF |
| Cover grille A | - | A0 |
| - | Cover grille A | 0A |
| Cover grille A | Cover grille A | AA |
| Cover grille B | - | B0 |
| - | Cover grille B | 0B |
| Cover grille B | Cover grille B | BB |
| Cover grille C | - | C0 |
| - | Cover grille C | 0C |
| Cover grille C | Cover grille C | CC |
| Cover grille D | - | D0 |
| - | Cover grille D | 0D |
| Cover grille D | Cover grille D | DD |
| Cover grille E | - | E0 |
| - | Cover grille E | 0E |
| Cover grille E | Cover grille E | EE |
| Cover grille G | - | G0 |
| - | Cover grille G | 0G |
| Cover grille G | Cover grille G | GG |
| Cover grille H | - | H0 |
| - | Cover grille H | 0H |
| Cover grille H | Cover grille H | HH |

A: Crimped wire mesh, 20 × 20 × 1.8 mm, galvanised steel (AG-E)

B: Square perforated metal plate, 10 × 10 mm, galvanised steel (AG-E)

C: Grille with slanted blades, aluminium (ALG-E)

D: Grille with slanted blades, aluminium, additionally with crimped wire mesh, 20 × 20 × 1.8 mm, galvanised steel (ALG-E)

E: Grille with slanted blades, aluminium, additionally with welded wire mesh, 6 × 6 mm, galvanised steel (ALG-E)

G: Grille with straight blades, aluminium, blade pitch 25 mm (AL-E)

H: Grille with straight blades, aluminium, blade pitch 12.5 mm (AL-E)

Any combination is possible

B24, B230 – Open/Close actuators

Application

- Open/Close actuators for the opening and closure of smoke control dampers, with automatic (AA) or manual release (MA).
- With integral limit switches for capturing the end positions
- Override control for up to 25 minutes
- Ambient temperature for normal operation: –30 to 50 °C, up to 95% rh, no condensation (EN 60730-1)
- Two integral limit switches with volt-free contacts can indicate the damper blade position (OPEN and CLOSED)
- The connecting cables of the 24 V actuator are fitted with plugs, which ensure quick and easy connection to the TROX AS-i bus system
- The connecting cable of the 230 V AC actuator is fitted with wire end ferrules

Variants

24 V AC/DC open/close actuators

| Actuator | BE24-12-ST TR | BLE24-ST TR |
|-----------------------------------|---|---|
| Supply voltage (AC) | 24 V AC ± 20 %, 50/60 Hz | 24 V AC ± 20 %, 50/60 Hz |
| Supply voltage (DC) | 24 V DC –10 %, +20 % | 24 V DC –10 %, +20 % |
| Power consumption – when running | 12 W | 7.5 W |
| Power consumption – when idle | 0.5 W | < 0.5 W |
| Power rating for cable sizing | 18 VA, I _{max.} 8.2 A @ 5 ms | 9 VA, I _{max.} 2.7 A @ 5 ms |
| Torque | 40 Nm | 15 Nm |
| Running time for 90° | < 60 s | < 30 s |
| Limit switch contacts | 2 changeover contacts | 2 changeover contacts |
| Max. switching voltage (AC) | 250 V AC/5 V DC | 250 V AC/5 V DC |
| Max. switching voltage (DC) | 110 V DC | 110 V DC |
| Switching current | 1 mA – 6 A | 1 mA – 3 A |
| Connecting cable – actuator | 3 × 0.75 mm ² , 1 m long, free of halogens | 3 × 0.75 mm ² , 1 m long, free of halogens |
| Connecting cable – limit switches | 6 × 0.75 mm ² , 1 m long, free of halogens | 6 × 0.75 mm ² , 1 m long, free of halogens |
| IEC protection class | III (protective extra-low voltage) | III (protective extra-low voltage) |
| Protection level | IP 54 | IP 54 |
| EC conformity | EMC to 2014/30/EU, low voltage to 2014/35/EU | EMC to 2014/30/EU, low voltage to 2014/35/EU |
| Operating temperature | –30 to 50 °C | –30 to 50 °C |
| Weight | 2.7 kg | 1.7 kg |

B24

- 24 V AC/DC supply voltage
- BE24-12-ST TR: Torque 40 Nm
- BLE24-ST TR: Torque 15 Nm

B230

- Supply voltage 230 V AC
- BE230-12 TR: Torque 40 Nm
- BLE230 TR: Torque 15 Nm

The torque required to operate the smoke control damper depends on the size which is why the actuator type cannot be chosen freely.

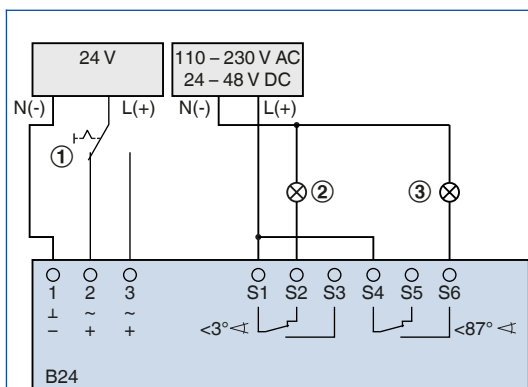
Installation information

- Feeding the electric connecting cable through the actuator encasing requires a drilled hole of the exact size (Ø max. + 1 mm)
- A wire clamping bracket is required
- For details on maintenance and inspection refer to the installation and operating manual

230 V AC open/close actuators

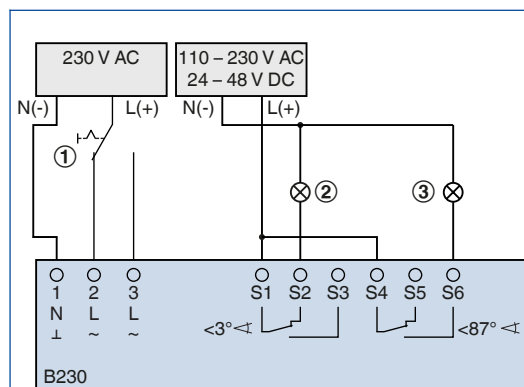
| Actuator | BE230-12 TR | BLE230 TR |
|-----------------------------------|--|--|
| Supply voltage | 230 V AC \pm 15 %, 50/60 Hz | 230 V AC \pm 15 %, 50/60 Hz |
| Power consumption – when running | 8 W | 5 W |
| Power consumption – when idle | 0.5 W | < 1 W |
| Power rating for cable sizing | 15 VA, I_{max} 7.9 A @ 5 ms | 12 VA, I_{max} 6 A @ 5 ms |
| Torque | 40 Nm | 15 Nm |
| Running time for 90° | < 60 s | < 30 s |
| Limit switch contacts | 2 changeover contacts | 2 changeover contacts |
| Max. switching voltage (AC) | 250 V AC/5 V DC | 250 V AC/5 V DC |
| Max. switching voltage (DC) | 110 V DC | 110 V DC |
| Switching current | 1 mA – 6 A | 1 mA – 3 A |
| Connecting cable – actuator | 3 \times 0.75 mm ² , 1 m long, free of halogens | 3 \times 0.75 mm ² , 1 m long, free of halogens |
| Connecting cable – limit switches | 6 \times 0.75 mm ² , 1 m long, free of halogens | 6 \times 0.75 mm ² , 1 m long, free of halogens |
| IEC protection class | II (protective insulation) | II (protective insulation) |
| Protection level | IP 54 | IP 54 |
| EC conformity | EMC to 2014/30/EU, low voltage to 2014/35/EU | EMC to 2014/30/EU, low voltage to 2014/35/EU |
| Operating temperature | -30 to 50 °C | -30 to 50 °C |
| Weight | 2.7 kg | 1.7 kg |

B24 connecting cable core identification



- 1: Ground, neutral
- 2: Control voltage for direction OPEN
- 3: Control voltage for direction CLOSE
- ① Switch for opening and closing, to be provided by others
- ② Indicator light for CLOSED position, to be provided by others
- ③ Indicator light for OPEN position, to be provided by others

B230 connecting cable core identification



- 1: Ground, neutral
- 2: Control voltage for direction OPEN
- 3: Control voltage for direction CLOSE
- ① Switch for opening and closing, to be provided by others
- ② Indicator light for CLOSED position, to be provided by others
- ③ Indicator light for OPEN position, to be provided by others

Control and communication modules for smoke control dampers

| Type | B24A | B24AS | B24BKNE | B24C | B230D | B24D |
|-------|----------|------------|------------|------|----------|-------------|
| | AS-EM/EK | AS-EM-SIL2 | BKNE230-24 | BC24 | BRM-10-F | BRM-10-F-ST |
| EK-EU | x | x | x | x | x | x |
| EK-JZ | x | x | x | x | x | x |

B24A – AS-EM/EK

Application

- Module for the control of smoke control dampers
- Capturing damper blade positions OPEN and

CLOSED

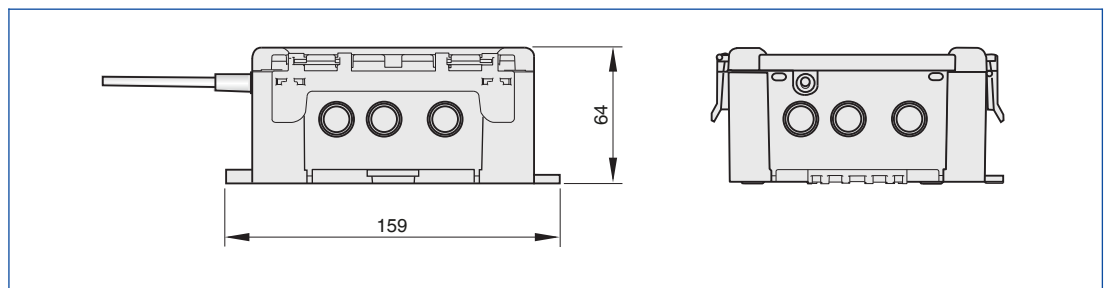
- Actuators can be started even without controller communication
- LEDs for OPEN and CLOSED positions; monitoring of running time errors
- Integral AS-Interface slave

- Monitoring of signal reception
- Master can be used to monitor the running time of the damper blade actuator
- Supply voltage of the module and 24 V DC
- actuator using AS-Interface (2-wire control)
- Plug-in connection for Belimo actuators (factory mounted and wired)

| Damper accessories (mounted) | Application |
|------------------------------|-------------------------------------|
| B24A | Mounted to the smoke control damper |

| Description | AS-EM/EK |
|-------------------------------------|--|
| Electrical design | 4 inputs/3 outputs |
| Output function | PNP transistor |
| Supply voltage | 26.5 – 31.6 V DC |
| Current consumption, incl. actuator | 450 mA |
| Inputs | |
| Switching | DC PNP |
| Sensor voltage supply | AS-i |
| Voltage range | 18 – 30 V DC |
| With short circuit protection | Yes |
| Switching level – high signal 1 | 10 |
| Input current high/low | > 7 mA / < 2 mA |
| Input characteristic | IEC 61131-2 Type 2 |
| Outputs, PNP | |
| Galvanically isolated | No |
| With short circuit protection | Yes |
| Max. current load per output | 400 mA per output/400 in total (from AS-i) |
| Outputs, relay | |
| Galvanically isolated | Yes |
| Maximum voltage | 32 V |
| Max. current load | 500 mA |
| Ambient temperature | -5 to 75 °C |
| Protection level | IP 42 |
| AS-i profile | S-7.A.E |
| I/O configuration | 7 Hex |
| ID code | 7 Hex |
| EMC | EN 61000-6-2; EN 61000-6-3 |

AS-EM/EK



B24AS – AS-EM/SIL2

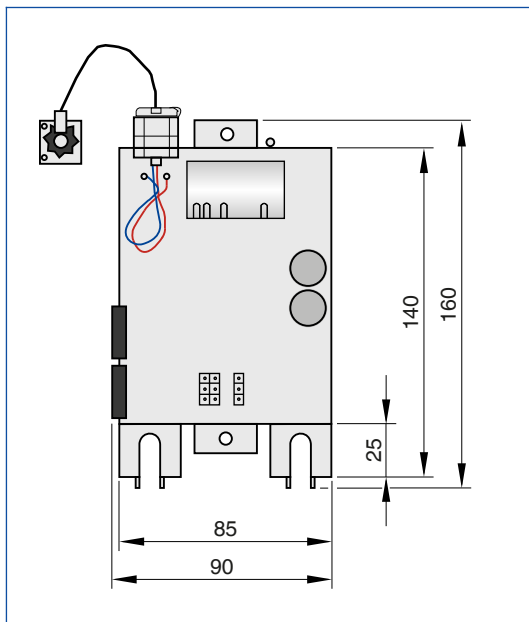
Application

- Module for the control of smoke control dampers
- Capturing damper blade positions OPEN and CLOSED
- Approved up to SIL2 to IEC/EN 61508
- Integral AS-Interface slave
- Monitoring of signal reception
- Master can be used to monitor the running time of the damper blade actuator
- Connection with terminals
- Supply voltage of the module and 24 V DC actuator using AS-Interface (2-wire control)
- Plug-in connection for Belimo actuators (factory mounted and wired)

| Damper accessories (mounted) | Application |
|------------------------------|-------------------------------------|
| B24AS | Mounted to the smoke control damper |

| Description | AS-EM/SIL2 |
|------------------------------|--|
| Supply voltage | 26.5 – 31.6 V DC |
| Current consumption | < 400 mA from AS-i |
| Max. current load per output | 340 mA |
| Max. current load per module | 340 mA |
| Status LED | |
| AS-i power | 1 × green |
| PeripheralFault | 1 × red, blinking |
| ComError | 1 × red, static |
| Output Q0 | 1 × yellow (DO0) |
| Output Q1 | 1 × yellow (DO1) |
| Input status LED SI-1 | 1 × yellow |
| Input status LED SI-2 | 1 × yellow |
| Input status DI0 | 1 × yellow (DI0) |
| Input status DI1 | 1 × yellow (DI1) |
| Input status DI2 | 1 × yellow (DI2) |
| Binary inputs | 2 outputs with transistor (typically 24 V DC from AS-i, voltage range 18 – 30 V) |
| Operating temperature | –20 to 70 °C |
| Storage temperature | –20 to 75 °C |
| Protection level | IP 54 |
| Casing material | Plastic |
| AS-i profile | S-7.B.E (Safety at Work) and S7.A.E (motor module) |
| EMC | EN 61000-6-2; EN 61000-6-3 |

AS-i module AS-EM/SIL2



Note

Actuators and communication modules are

B24BKNE – Communication module

Application

- Communication and power supply unit for 24 V actuators in smoke extract applications,

factory tested together; only tested combinations must be used.

status LEDs, retention of the damper control input signal, 230 V AC connection, 1 m cable, free of halogens

| Order code | Application |
|------------|---------------------------------|
| B24BKNE | Communication module BKNE230-24 |

| Description | BKNE230-24 |
|------------------------|---|
| Nominal voltage | 230 V AC 50/60 Hz |
| Functional range | 198 – 264 V AC |
| Rating | 19 VA (including actuator) |
| Power consumption | 10 W (including actuator) |
| Length / cross section | On the actuator = 1 m, 3 (6*) × 0.75 mm ² (free of halogens) |
| IEC protection class | II (protective insulation) |
| Ambient temperature | –30 to 50 °C |
| Storage temperature | –40 to 80 °C |
| Protection level | IP 54 |
| EC conformity | EMC to 89/336/EEC, 73/23/EEC |
| Mode of action | Type 1 (EN60730-1) |
| Software class | A (EN60730-1) |
| Maintenance | Maintenance-free |
| Weight | 680 g |

B24C – Communication module

Application

SLC technology
The BC 24 module is used for the control of damper actuators
Power supply and communication with an

interchangeable two core cable, SLC24-16B system.
A thermoelectric release mechanism and a duct smoke detector can be connected without the need for additional devices

| Order code | Application |
|------------|--|
| B24C | BC24 communication module from BV-Control AG |

| Description | B24C |
|----------------------|-----------------------------------|
| Nominal voltage | From SLC® control module |
| Power consumption | 1 W |
| Connections | Plug connections, screw terminals |
| Damper power supply | 24 V |
| Ambient temperature | –20 to 50 °C |
| Storage temperature | –20 to 80 °C |
| Humidity | 95% rh, no condensation |
| Weight | 255 g |
| B × H × T | 114 × 153 × 54 mm |
| Max. impulse voltage | 2.5 kV (EN60730-1) |

B24D, B230D – Communication module

Application

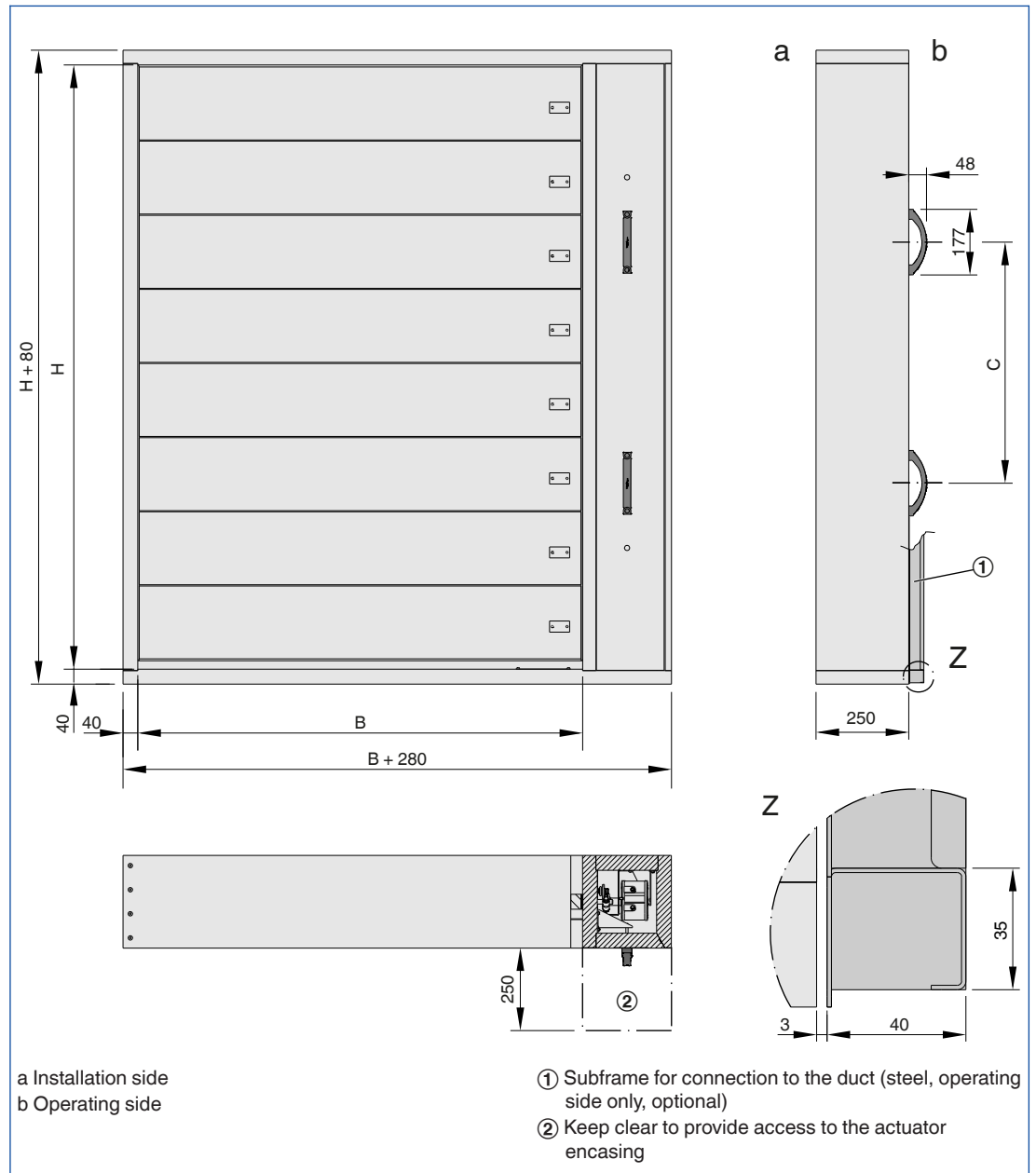
AGNOSYS system
BRM-F-ST is used for the monitoring and control

of smoke control dampers
Up to 126 modules can be connected in a ring topology

| Order code | Application |
|------------|---------------------------------------|
| B24D | AGNOSYS BRM10FST communication module |
| B230D | AGNOSYS BRM10F communication module |

| Description | B24D/B230D |
|---------------------|-----------------------------------|
| Nominal voltage | 18 – 32 V DC (typically 24 V) |
| Connections | Plug connections, screw terminals |
| Damper power supply | 24/230 V AC 24 V DC |
| Ambient temperature | 0 – 45 °C |
| Humidity | 90% rh, no condensation |
| Weight | 510 g |
| B x H x T | 158 x 180 x 65 mm |

EK-JZ



EK-JZ, weights [kg], width 200 – 650 mm

| L [mm] | H [mm] | B [mm] | | | | | | | | | |
|--------|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 |
| 250 | 430 | 29 | 31 | 32 | 33 | 35 | 36 | 38 | 39 | 41 | 42 |
| | 630 | 37 | 39 | 41 | 43 | 44 | 46 | 48 | 50 | 51 | 53 |
| | 830 | 46 | 48 | 50 | 53 | 54 | 56 | 58 | 61 | 62 | 64 |
| | 1030 | 54 | 56 | 59 | 61 | 63 | 66 | 68 | 70 | 73 | 75 |
| | 1230 | 62 | 65 | 67 | 70 | 73 | 75 | 78 | 81 | 83 | 86 |
| | 1430 | 71 | 73 | 76 | 79 | 82 | 85 | 88 | 91 | 94 | 97 |
| | 1630 | 79 | 82 | 85 | 88 | 92 | 95 | 98 | 101 | 105 | 108 |
| | 1830 | 87 | 91 | 94 | 98 | 101 | 105 | 108 | 112 | 115 | 119 |
| 2030 | 95 | 99 | 103 | 107 | 111 | 114 | 118 | 122 | 126 | 130 | |

EK-JZ, weights [kg], width 700 – 1200 mm

| L [mm] | H [mm] | B [mm] | | | | | | | | | | |
|--------|--------|--------|-----|-----|-----|-----|-----|------|------|------|------|------|
| | | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 | 1150 | 1200 |
| 250 | 430 | 44 | 45 | 47 | 48 | 49 | 51 | 52 | 54 | 55 | 57 | 58 |
| | 630 | 55 | 57 | 58 | 60 | 62 | 64 | 65 | 67 | 69 | 71 | 72 |
| | 830 | 66 | 69 | 70 | 72 | 75 | 77 | 78 | 80 | 83 | 85 | 87 |
| | 1030 | 77 | 80 | 82 | 84 | 87 | 89 | 91 | 94 | 96 | 98 | 101 |
| | 1230 | 89 | 91 | 94 | 97 | 99 | 102 | 104 | 107 | 110 | 112 | 115 |
| | 1430 | 100 | 103 | 106 | 109 | 112 | 115 | 117 | 120 | 123 | 126 | 129 |
| | 1630 | 111 | 114 | 118 | 121 | 124 | 127 | 130 | 134 | 137 | 140 | 143 |
| | 1830 | 122 | 126 | 129 | 133 | 136 | 140 | 143 | 147 | 150 | 154 | 158 |
| | 2030 | 134 | 137 | 141 | 145 | 149 | 153 | 156 | 160 | 164 | 168 | 172 |

Design information

- Approved for use in mechanical smoke extract systems
- For use in pressurisation systems
- For use in natural smoke and heat exhaust systems
- For heat exhaust purposes
- A cover grille is required either on the damper or at the end of the smoke extract duct
- If the damper is installed in a solid shaft wall and on or in a fire-resistant smoke extract duct with a lower fire resistance class than that of the smoke control damper, the fire resistance class of the shaft wall applies also to EK-JZ (details upon request)
- Fire-resistant smoke extract ducts must be installed in such a manner that they do not impose any significant loads on the smoke control damper in the event of a fire

- Sheet steel smoke extract ducts to EN 1366-9 must be connected with flexible connectors according to the manufacturer's instructions for the sheet steel ducts
- Smoke control dampers must be installed, connected and attached according to the operating and installation manual

Declaration of performance and installation and operating manual

- For details on the correct use and on the performance level, refer to the declaration of performance
- The correct installation of the smoke control damper is described in the installation and operating manual
- Both documents are available for download on our website

Installation and commissioning

- Installation on/in concrete or masonry shaft walls
- Installation in or on tested, fire-resistant vertical or horizontal smoke extract ducts
- Installation in fire-resistant REI 90 or EI 90 walls
- For smoke extract ducts made of calcium silicate from 35 mm wall thickness
- After installation the damper must remain accessible for inspection, cleaning and repair
- Connected smoke extract ducts must have an inspection access
- Mechanical smoke extract systems require that the power supply is maintained even in the event of a fire

Smoke control dampers must be installed, connected and attached according to the operating and installation manual

Principal dimensions

L [mm]

Length of the smoke control damper

B [mm]

Width of the smoke control damper

H [mm]

Height of the smoke control damper

Nomenclature

\dot{V} [m³/h] and [l/s]

Volume flow rate

L_{WA} [dB(A)]

A-weighted sound power level of air-regenerated noise for the smoke control damper

A [m²]

Free area

Δp_t [Pa]

Total differential pressure

v [m/s]

Airflow velocity based on the upstream cross section (B × H)