

Axial Fans

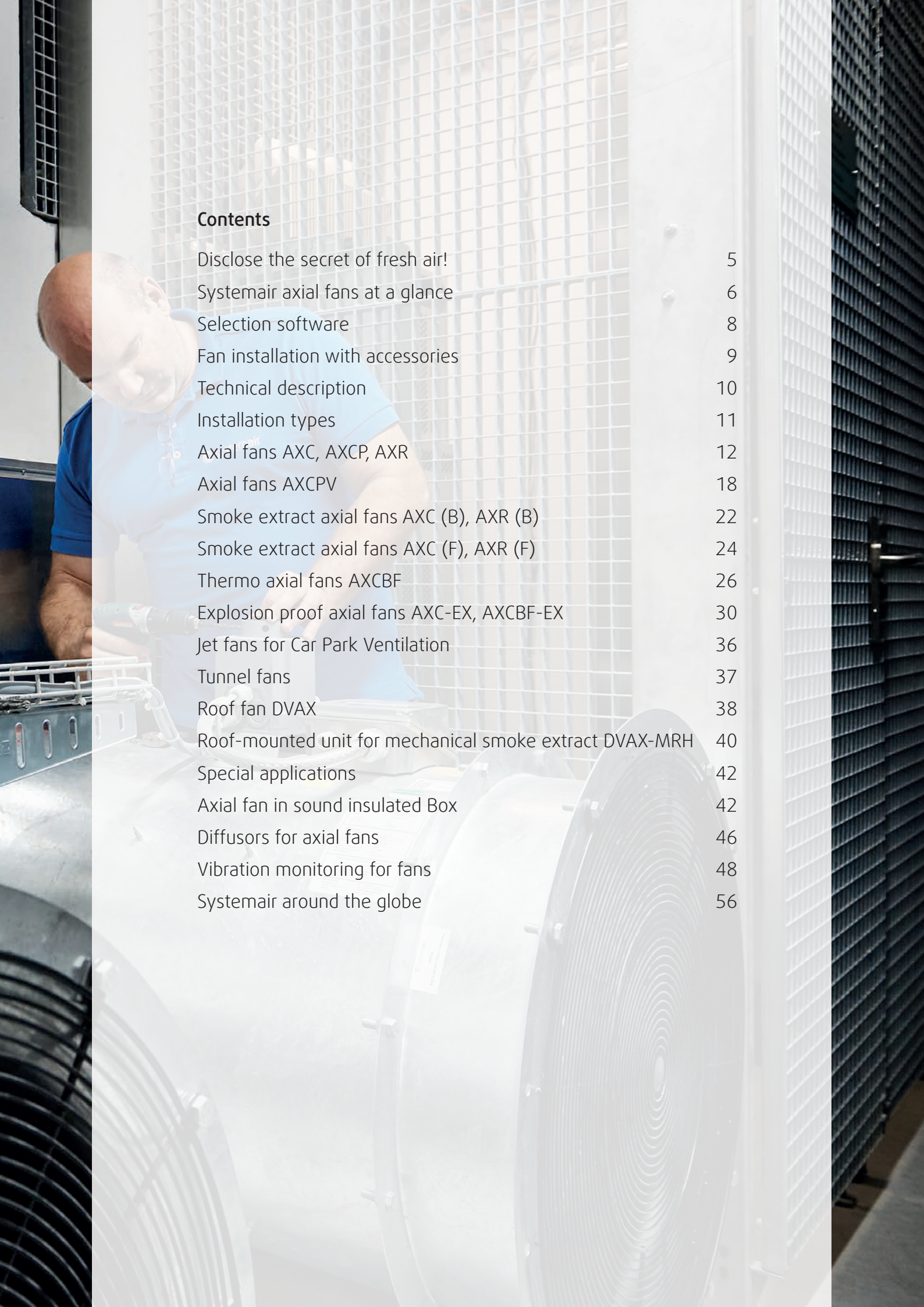
All Systemair axial fans at a glance



L62 RDA
RDA Personenlift 1
Zuluft 30'000m³/h

L63 RDA
RDA Personenlift 2
Zuluft 30'000m³/h





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Good climate is the basis for health, performance and well-being.

It is the provision of efficient ventilation and air conditioning systems that drives us forward, as well as the simplification of the work of the planner and installer. Based on the basic values of simplicity and reliability, we develop, produce and distribute high-quality ventilation and air conditioning systems.





Disclose the secret of fresh air!

Since 1974 Systemair cares for the purity of an essential resource. Today Systemair is one of the leading ventilation companies worldwide. A success story, which started in Skinnskatteberg, Sweden, with the invention of the inline duct fan. This invention revolutionised the ventilation world.

Since then the company has continuously advanced and now offers a comprehensive range of products for all ventilation and air conditioning requirements. The experts of Systemair know the conditions and see the point whatever you need - the ventilation concept of a shopping centre,

domestic ventilation of a single family house or the ventilation of tunnels and metro stations. Over 5500 employees in more than 65 subsidiaries and 50 countries are available for the essential proximity to the customers.



This brochure presents the wide range of our medium pressure axial fans. For further information about our axial fan range and all the other Systemair products you can contact our experts in your local Systemair company or you can just visit our online catalogue on www.systemair.com.

All Systemair axial fans at a glance

Systemair offers a wide range of axial fans in various designs. For most applications in the ventilating or air conditioning sector as well as in a lot of industrial and commercial applications a Systemair fan can be selected. Some examples are: mining, tunnel ventilation, car park ventilation, applications in explosion hazardous areas and high temperature fans to extract heat and smoke in case of a fire.

Finding the right solution is important from many aspects: Trust in the product and producer, safety in the application, lowest possible energy consumption, good and matching functionality, the cost benefit ratio, a space saving design, the delivery just in time and many more. Our experts will be pleased to help you in all these questions and be at your disposal.

This brochure gives you an overview of our complete axial fan product range, so you can choose the right fan for your application. Performance curves and technical details for the required fan duties are available from our selection software, which is available in an online version on our website www.systemair.com.

Systemair is working in accordance with the following standards:

Quality

ISO 9001: Quality management system, monitored by TÜV Süd. Certificate on www.systemair.com.

ISO 14001: Environmental management system, monitored by TÜV Süd. Certificate on www.systemair.com

DIN 24166: Technical terms of delivery for fans.

CE marking

The CE marking is a mandatory conformity mark in the European Economic Area. By affixing the CE marking, the manufacturer asserts that the item meets all the essential requirements of the relevant European Directive(s).

Testing:

ISO 5801: "Industrial fans, performance testing..."

DIN 24163: "Fans, performance testing..."

AMCA 210-07: "Laboratory methods of testing fans for aerodynamic performance rating"

EN 12101-3: "Smoke and heat control systems - powered smoke and heat exhaust..."

ISO 13350: Jet fans

EN certificates on www.systemair.com

- **As per EC Machinery Directive 98/37/EEC Annex IIA, fans for ventilation... the following harmonized standards are used:**

- » EN 60 204-1: "Safety of machinery - electrical equipment, general requirements"
- » EN 292-1: "Safety of machinery, design" EN ISO 12100
- » EN294: "Safety of machinery, safety distances" EN ISO 13857
- » EN 60 034-1: "Rotating electric machinery, ratings and performance"

- **As per EC Low Voltage Directive 73/23/EEC and 93/68/EEC the following harmonized standards are used:**

- » EN 60 204-1: "Safety of machinery - electrical equipment, general requirements"
- » EN 60 034-5: "Rotating electric machinery, protection classification"

- **As per EMC-directive 89/336/EEC and EMC-directive 93/68/EEC the following harmonized standards are used:**

- » EN 61000-6-1 and 6-2: Electromagnetic compatibility



Available fan ranges

Fan range	Application	Impeller diameter (mm)	-20 °C to +55 °C ∞	200 °C ∞	250 °C/ 120 min.	300 °C/ 120 min.	400 °C/ 120 min.	Car Park Jet Fans	Tunnel Jet Fans	Explosive atmosphere
AXC	supply/exhaust	560 - 2,240	•							
AXCP	supply/exhaust	315 - 500	•							
AXCPV	supply/exhaust	315 - 500	•							
AXC (B)	exhaust	315 - 1,600	•			•				
AXC (F)	exhaust	315 - 1,600	•				•			
AXCBF	exhaust	250 - 800	•	•						
AXR	supply/exhaust	315 - 2,240	•							
AXR (K)	supply/exhaust	1,500 - 2,240	•		•					
AXR (B)	supply/exhaust	315 - 1,600	•			•				
AXR (F)	supply/exhaust	315 - 1,600	•				•			
AJ8	impulse ventilation	315 - 400	•					•		
AJR-TR	impulse ventilation reversible	315 - 400	•					•		
AJ8 (B)	impulse ventilation	315 - 400	•			•		•		
AJR (B)-TR	impulse ventilation reversible	315 - 400	•			•		•		
AJR (F)-TR	impulse ventilation reversible	315 - 400	•				•	•		
AXC-EX*	supply/exhaust	315 - 1,600								•
AXCBF-EX*	exhaust	250 - 800								•
AJ	impulse ventilation reversible	500 - 1,600	•						•	
AJ (K)	impulse ventilation reversible	500 - 1,600	•		•				•	
AJ (B)	impulse ventilation reversible	500 - 1,600	•			•			•	
AJ (F)	impulse ventilation reversible	500 - 1,600	•				•		•	
...-G	two in series	315 - 2,000	•		•	•	•			
...-Box	sound insulated	315 - 1,000	•		•	•	•			

* -20 °C to +40 °C



Go quickly to the right axial fan

You can use our **selection program** to choose the perfect fans, compact air handling units and diffusers for your application quickly and with a precise operating point.

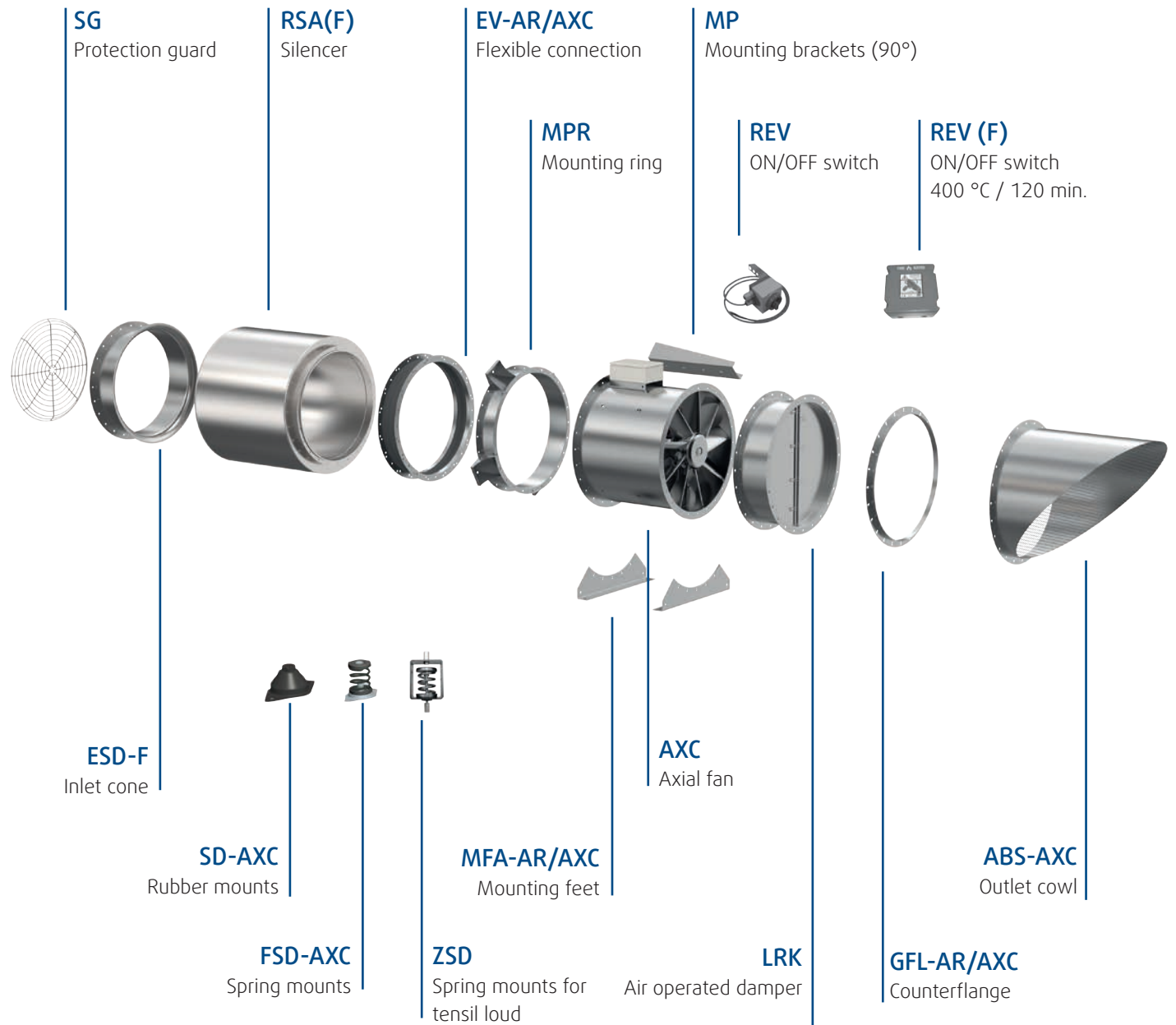
You can find an overview of all our products with the necessary technical data in our **online catalogue**. To complete your ventilation package, in the catalogue you will also find our comprehensive range of accessories to complement each product.

You can find this and much more useful and interesting information on **www.systemair.com**.

Take a look for yourself and discover the world of ventilation and air conditioning!

System solution for axial fans of Systemair

Matched perfectly to your requirements



Technical description

Fan sizes and duties

Systemair axial fans are offered in sizes from 315 mm up to 2,240 mm diameter. Air volumes of up to 500,000 m³/h and static pressure of up to 2,800 Pa can be achieved. Higher pressures can be offered with two fans installed in series (AXC-G models on request). Fan performance in accordance with ISO 5801, part 1, category D.

Casing

The casing and motor fixation is manufactured from galvanized steel. The terminal box is fitted on the outside of the casing.

Impellers

The impellers (hub and blades) are manufactured from highly resistant aluminium alloy. The blades have an aerodynamic profile to guarantee high efficiencies and a low noise level.

The hub design allows adjustment of the blade angle during assembly of the fan in the factory, in order to achieve the optimum working point. This further increases the possible fan duties per diameter. In the performance curves $P_{2_{max}}$ is indicated, the maximum absorbed power of the impeller, related to the relevant blade angle setting.

Motors

Systemair uses 400 V/50 Hz three phase motors in accordance with IEC standard 34-1. The motors are suitable for medium temperatures from -20 °C up to +55 °C and are equipped with cold conductors for motor protection. Protection class IP55, insulation class F. Other medium temperatures, protection classes or isolation classes are available on request. The standard motor range includes single and two speed motors.

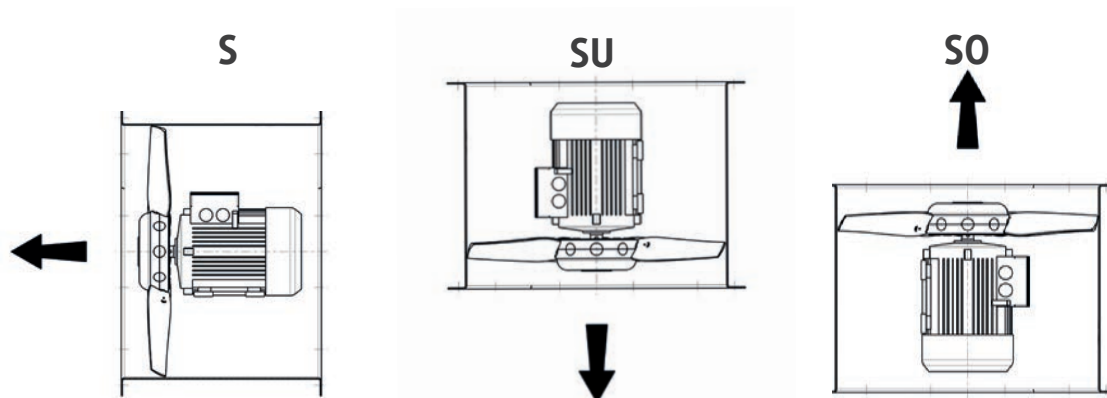
Mounting position and airflow direction

Systemair axial fans AXC can be installed in different mounting positions. Should there be no different information in your order, the fans will be supplied in airflow direction "S", see pictures below. You will find arrows indicating the direction of rotation and airflow direction at the outside of the casing. For bigger motor powers (guideline: from IEC 160, 11 [kW]) it is important to inform us with your order in case the fans are to be installed in a different airflow direction than "S", as the motor bearings then are subject to a higher stress which we have to take into account.

Accessories

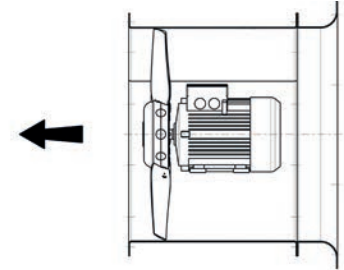
Systemair offers a wide range of accessories, such as:

- protection guards
- mounting feet (horizontal installation) or mounting brackets (vertical installation)
- counter flanges
- flexible connections
- inlet cones
- automatic shutters
- anti vibration mounts
- isolators for single or two-speed motors
- silencers (with and without core)

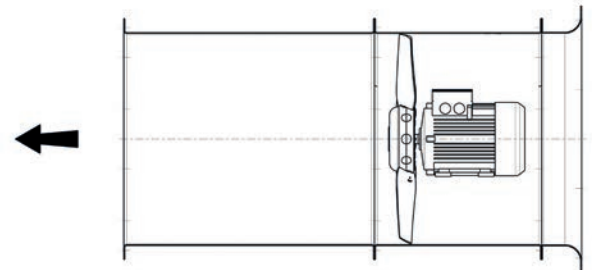


Installation types

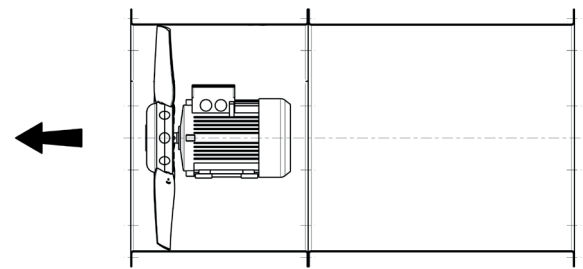
A free inlet
free outlet



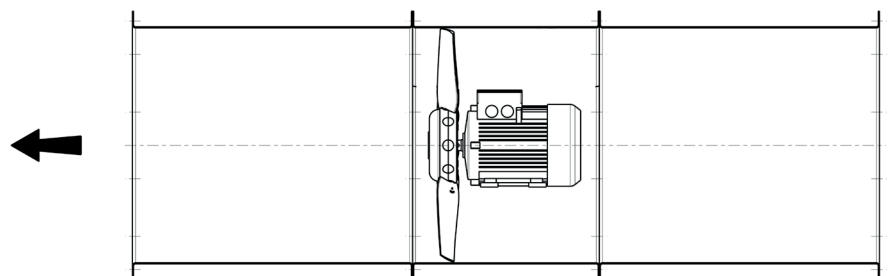
B free inlet
ducted outlet side



C ducted inlet side
free outlet



D ducted inlet side
ducted outlet side



Installation types according to ISO 5801

AXC / AXCP / AXR

Axial fans



- AXC with aerofoil impeller, adjustable pitch angle for maximum efficiency
- Hub and blades are manufactured from highly resistant aluminium alloy
- Terminal box in IP65 mounted at the outside of the casing for easy wiring (AXC-E without terminal box)
- Suitable for operating temperatures between -20 °C and +55 °C
- Inspection hole to verify correct direction of rotation
- 60 Hz range available

The Systemair AXC, AXCP and AXR range of long cased medium pressure axial fans is available in sizes from 315 up to 2,240 mm nominal diameter. The adjustable pitch angle setting offers a wide performance and maximum flexibility to match precisely individual airflow requirements. The AXC, AXCP and AXR axial fans have been performance tested in accordance with DIN ISO 5801, DIN 24163 and AMCA 210-07 on the Systemair fan test rig.

High efficiency impellers

The AXC die cast aerofoil aluminium impellers can be offered with full or fractional solidities, maximum efficiencies can be obtained. Different impeller/hub configurations allow high operating pressures. AXR impellers are truly reversible.

Sturdy casing

Casings are heavy gauge, galvanized, with spun flanges for high rigidity (AXC-E and AXC-EK is made of pre-galvanised sheet steel). Long cased execution as standard stock range. Also available with short casing and with an acoustically insulated box.

Motors

The built-in motors are equipped with PTC thermistors for optimum motor protection. Single or two speed motors. Speed controllable by frequency converter.

Multi stage fans

For higher pressure drops two stage fans are offered. Two fans in series increase the available static operational pressure.

Quality

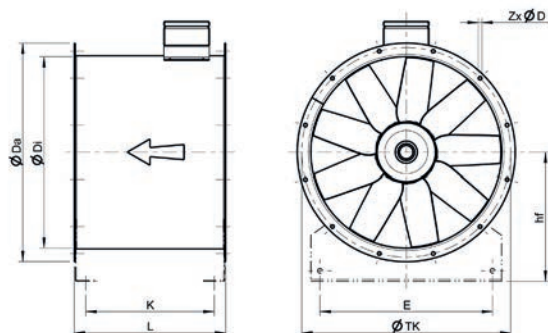
Systemair is certified according to ISO 9001 and ISO 14001. The Systemair quality system is regularly monitored by TÜV Süd.



Warranty

The Systemair general terms and conditions apply.

Dimensions

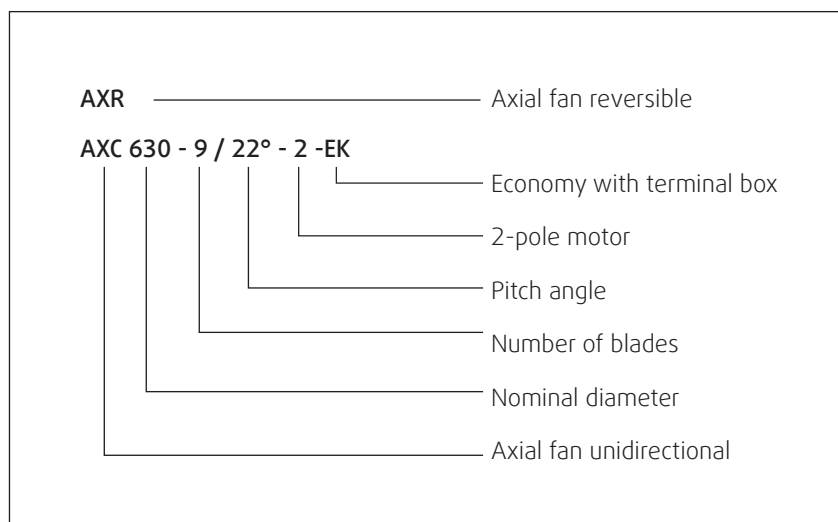


AXC	$\varnothing Di$	$\varnothing Da$	$\varnothing TK$	$Z \times \varnothing D$	L	hf	E	K
AXCP 315	315	395	355	8x10	425	235	265	360
AXCP 355	355	435	395	8x10	425	250	305	360
AXCP 400	400	480	450	8x12	450	280	350	385
AXCP 450	450	530	500	8x12	500	315	400	435
AXCP 500	500	590	560	12x12	540	335	440	464
AXCP 560	560	650	620	12x12	500/750*	375	500	424/674*
AXCP 630	630	720	690	12x12	500/750*	425	570	424/674*
AXC 710	710	800	770	16x12	500/700/800*	450	650	424/624/722*
AXC 800	800	890	860	16x12	500/700*	530	730	414/614*
AXC 900	900	1005	970	16x15	640/850*	560	830	552/762*
AXC 1000	1000	1105	1070	16x15	640/850*	670	930	552/762*
AXC 1200	1120	1260	1190	20x15	700/1000*	710	1030	612/910*
AXC 1250	1250	1390	1320	20x15	850/1050*	800	1180	740/938*

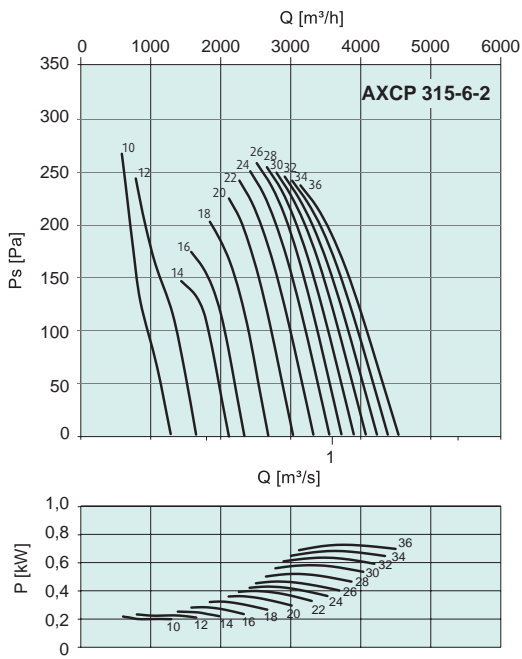
Dimensions in mm.

* Dimensions L + K depend on motor frame size

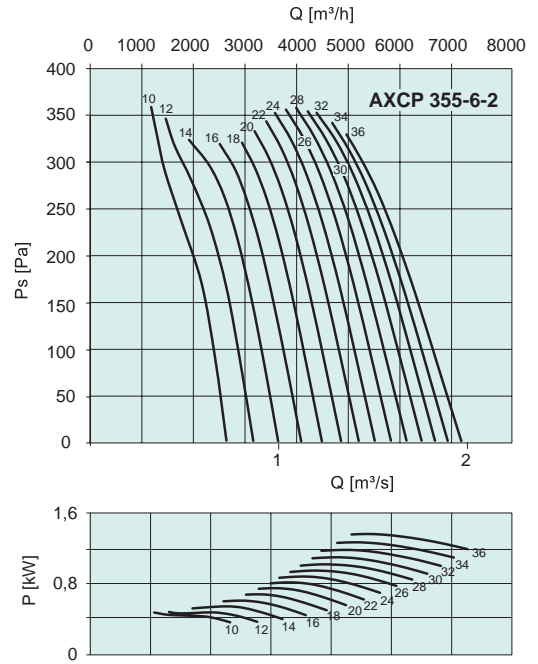
Ordering code



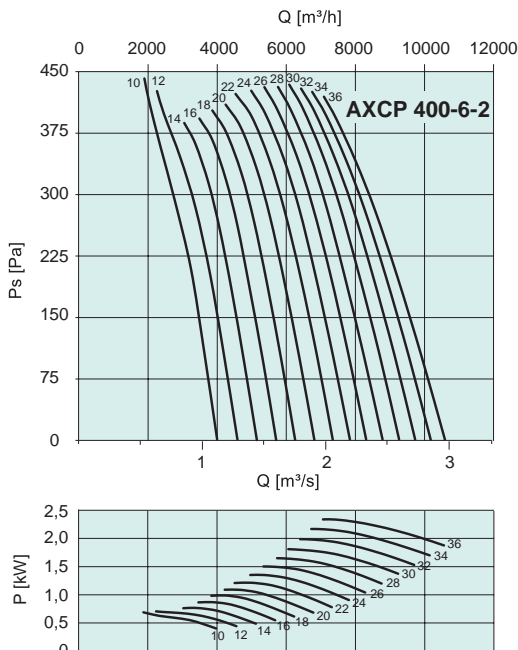
Quick selection



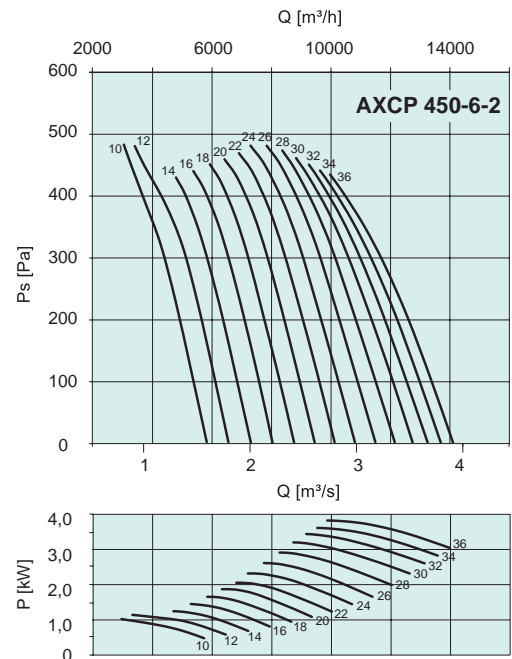
Article no.	Size *
CAXP31501IE3	AXCP 315-6-2 (0,75kW) IE3



Article no.	Size *
CAXP35501IE3	AXCP 355-6-2 (0,75kW) IE3
CAXP35502IE3	AXCP 355-6-2 (1,1kW) IE3
CAXP35503IE3	AXCP 355-6-2 (1,5kW) IE3

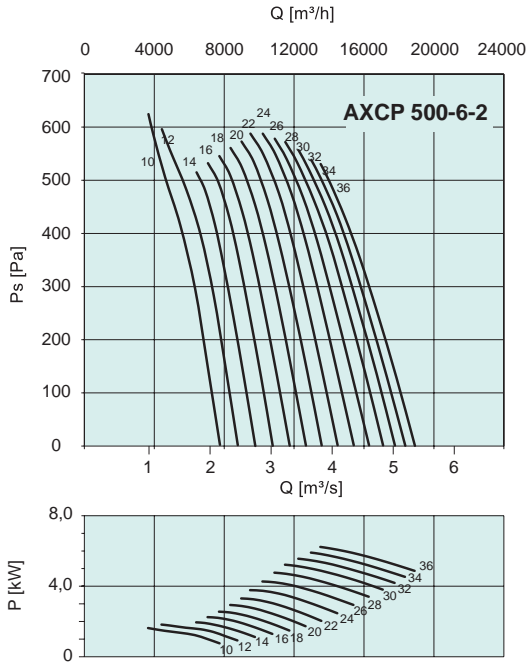


Article no.	Size *
CAXP40001IE3	AXCP 400-6-2 (0,75kW) IE3
CAXP40002IE3	AXCP 400-6-2 (1,1kW) IE3
CAXP40003IE3	AXCP 400-6-2 (1,5kW) IE3
CAXP40004IE3	AXCP 400-6-2 (2,2kW) IE3

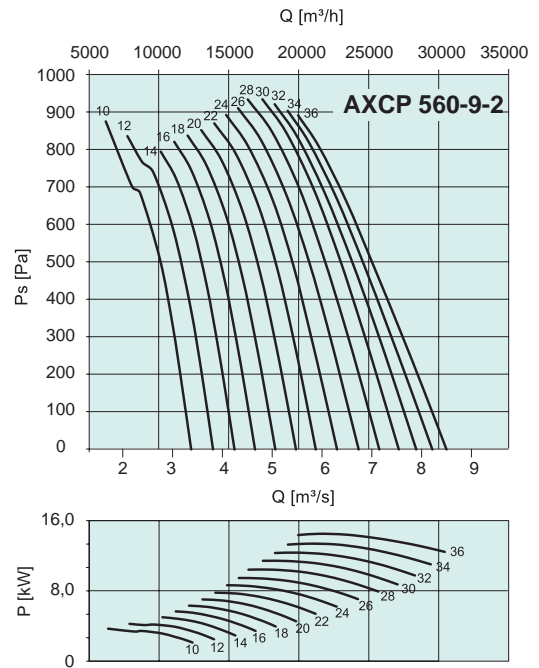


Article no.	Size *
CAXP45001IE3	AXCP 450-6-2 (0,75kW) IE3
CAXP45002IE3	AXCP 450-6-2 (1,1kW) IE3
CAXP45003IE3	AXCP 450-6-2 (1,5kW) IE3
CAXP45004IE3	AXCP 450-6-2 (2,2kW) IE3
CAXP45005IE3	AXCP 450-6-2 (3,0kW) IE3
CAXP45006IE3	AXCP 450-6-2 (4,0kW) IE3

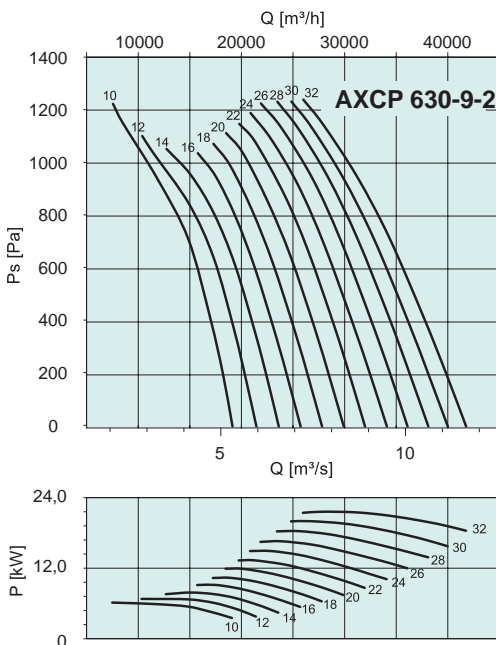
* Further performance curves in the selection program.



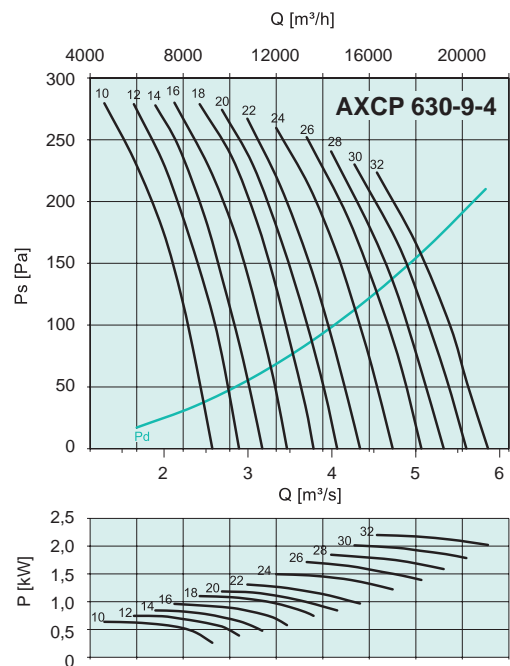
Article no.	Size *
CAXP50001IE3	AXCP 500-6-2 (1,1kW) IE3
CAXP50002IE3	AXCP 500-6-2 (1,5kW) IE3
CAXP50003IE3	AXCP 500-6-2 (2,2kW) IE3
CAXP50004IE3	AXCP 500-6-2 (3,0kW) IE3
CAXP50005IE3	AXCP 500-6-2 (4,0kW) IE3
CAXP50006IE3	AXCP 500-6-2 (5,5kW) IE3
CAXP50007IE3	AXCP 500-6-2 (7,5kW) IE3



Article no.	Size *
CAXP56001IE3	AXCP 560-9-2 (2,2kW) IE3
CAXP56002IE3	AXCP 560-9-2 (4,0kW) IE3
CAXP56003IE3	AXCP 560-9-2 (5,5kW) IE3
CAXP56004IE3	AXCP 560-9-2 (7,5kW) IE3
CAXP56005IE3	AXCP 560-9-2 (11,0kW) IE3
CAXP56006IE3	AXCP 560-9-2 (15,0kW) IE3

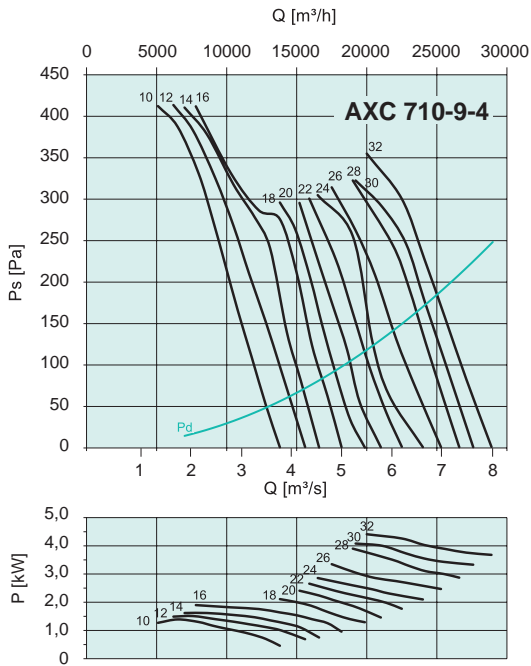


Article no.	Size *
CAXP63001IE3	AXCP 630-9-2 (2,2kW) IE3
CAXP63002IE3	AXCP 630-9-2 (3kW) IE3
CAXP63003IE3	AXCP 630-9-2 (4kW) IE3
CAXP63004IE3	AXCP 630-9-2 (5,5kW) IE3
CAXP63005IE3	AXCP 630-9-2 (7,5kW) IE3
CAXP63006IE3	AXCP 630-9-2 (11kW) IE3
CAXP63007IE3	AXCP 630-9-2 (15kW) IE3
CAXP63008IE3	AXCP 630-9-2 (18,5kW) IE3

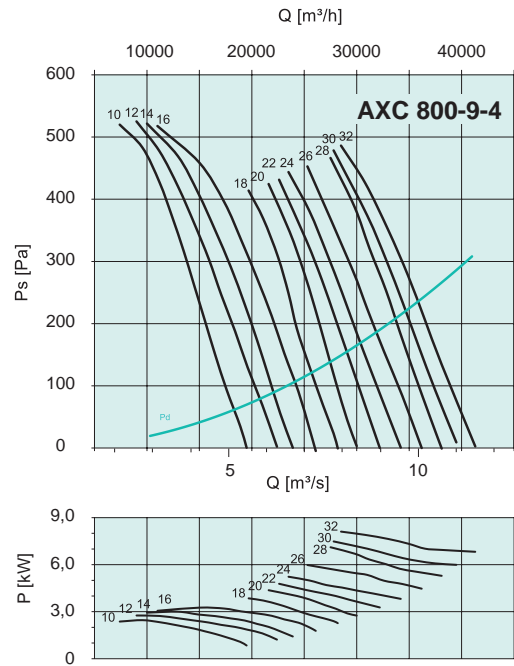


Article no.	Size *
CAX63029IE3	AXC 630-9-4 (2,2kW) IE3
CAX63030IE3	AXC 630-9-4 (3kW) IE3

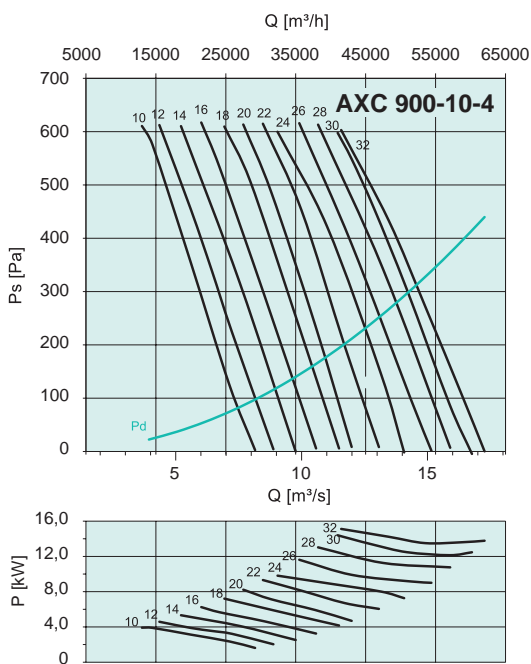
* Further performance curves in the selection program.



Article no.	Size *
CAX71009IE3	AXC 710-9-4 (2,2kW) IE3
CAX71010IE3	AXC 710-9-4 (3kW) IE3
CAX71011IE3	AXC 710-9-4 (4kW) IE3
CAX71012IE3	AXC 710-9-4 (5,5kW) IE3

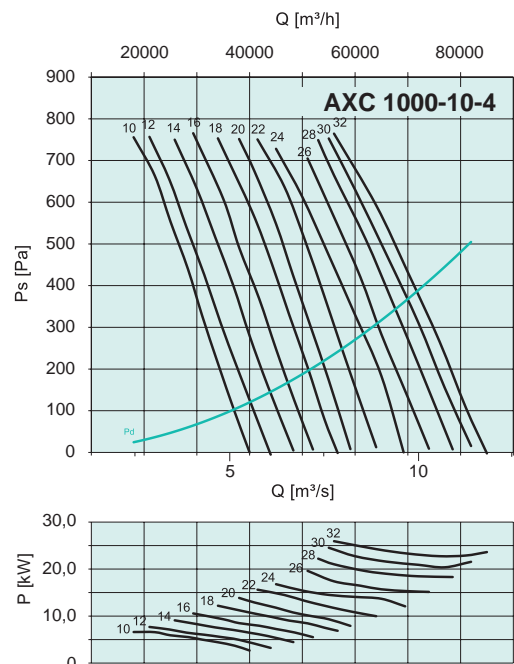


Article no.	Size *
CAX80011IE3	AXC 800-9-4 (2,2kW) IE3
CAX80012IE3	AXC 800-9-4 (3kW) IE3
CAX80013IE3	AXC 800-9-4 (4kW) IE3
CAX80014IE3	AXC 800-9-4 (5,5kW) IE3
CAX80015IE3	AXC 800-9-4 (7,5kW) IE3

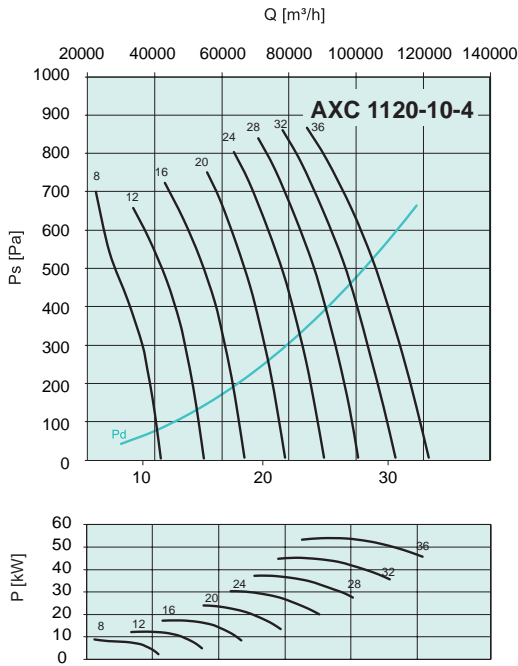


Article no.	Size *
CAX90008IE3	AXC 900-10-4 (2,2kW) IE3
CAX90009IE3	AXC 900-10-4 (3kW) IE3
CAX90010IE3	AXC 900-10-4 (4kW) IE3
CAX90011IE3	AXC 900-10-4 (5,5kW) IE3
CAX90012IE3	AXC 900-10-4 (7,5kW) IE3
CAX90013IE3	AXC 900-10-4 (11kW) IE3
CAX90014IE3	AXC 900-10-4 (15kW) IE3

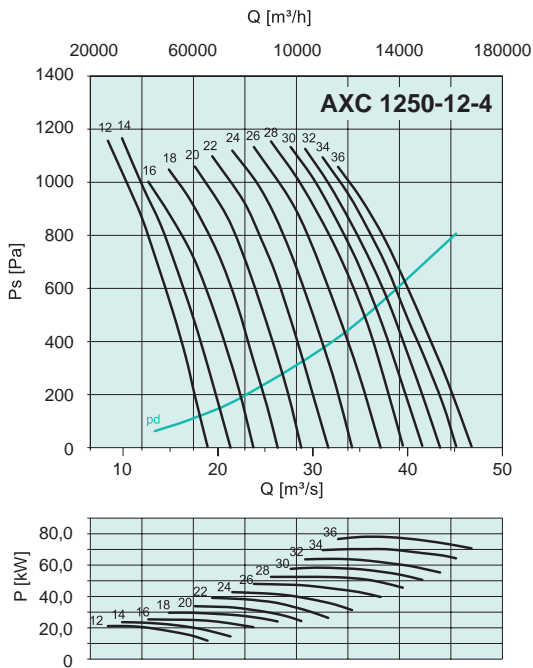
* Further performance curves in the selection program.



Article no.	Size *
CAX100007IE3	AXC 1000-10-4 (4kW) IE3
CAX100008IE3	AXC 1000-10-4 (5,5kW) IE3
CAX100009IE3	AXC 1000-10-4 (7,7kW) IE3
CAX100010IE3	AXC 1000-10-4 (11kW) IE3
CAX100011IE3	AXC 1000-10-4 (15kW) IE3
CAX100012IE3	AXC 1000-10-4 (18,5kW) IE3
CAX100013IE3	AXC 1000-10-4 (22kW) IE3
CAX100014IE3	AXC 1000-10-4 (30kW) IE3



Article no.	Size *
CAX112006IE3	AXC 1120-10-4 (5,5kW) IE3
CAX112007IE3	AXC 1120-10-4 (7,5kW) IE3
CAX112008IE3	AXC 1120-10-4 (11kW) IE3
CAX112009IE3	AXC 1120-10-4 (15kW) IE3
CAX112010IE3	AXC 1120-10-4 (18,5kW) IE3



Article no.	Size *
CAX125007IE3	AXC 1250-12-4 (11kW) IE3
CAX125008IE3	AXC 1250-12-4 (15kW) IE3
CAX125009IE3	AXC 1250-12-4 (18,5kW) IE3
CAX125010IE3	AXC 1250-12-4 (22kW) IE3
CAX125011IE3	AXC 1250-12-4 (30kW) IE3
CAX125012IE3	AXC 1250-12-4 (37kW) IE3
CAX125013IE3	AXC 1250-12-4 (45kW) IE3
CAX125014IE3	AXC 1250-12-4 (55kW) IE3

* Further performance curves in the selection program.

AXCPV

Axial fans



- Pre-mounted outlet guide vane section
- Improved impeller efficiency
- Unique ErP compliant high efficiency profile
- Aerodynamic impeller with adjustable pitch angle for maximum efficiency as well as lower installation and operating costs
- Hub and blades made of high-strength aluminium cast alloys
- External terminal box for easy electrical connection, IP65 VDE certified
- Suitable for transported air temperatures of up to +55 °C in continuous operation

Axial fans with energy-efficient blade design and CFD optimized outlet guide vane section for higher efficiency across the entire system characteristic field.

Thanks to the higher static pressure, a smaller fan size can be used - lower installation and purchasing costs as well as lower energy consumption is the result.

The adjustable pitch angle setting offers a wide performance and maximum flexibility to match precisely individual airflow requirements. The AXCPV axial fans have been performance tested in accordance with DIN ISO 5801, DIN 24163 and AMCA 210-99 on the Systemair fan test rig. The motors are equipped with PTC thermistors for optimum motor protection. The motor is speed controllable by frequency converter.

High efficiency impellers

Die cast aerofoil aluminium impellers with adjustable pitch angle for maximum efficiency. Impeller balanced statically and dynamically in accordance with DIN ISO 1940-1, quality grade G6,3.

Casing

Long casing manufactured with hot dip galvanized steel, according to DIN EN ISO 1461 and with spun flanges according Eurovent 1/2.

Motors

Three-phase motors IE2 efficiency or IE3 efficiency, IP55, insulation class F, in accordance with EN 60034-5/IEC 85. The motors are equipped with PTC thermistors for optimal motor protection. Available as one and two-speed motors (pole reversible). Standard motors are speed controllable by frequency converter.

VDE certified terminal box in IP65 mounted at the outside of the fan casing for easy wiring

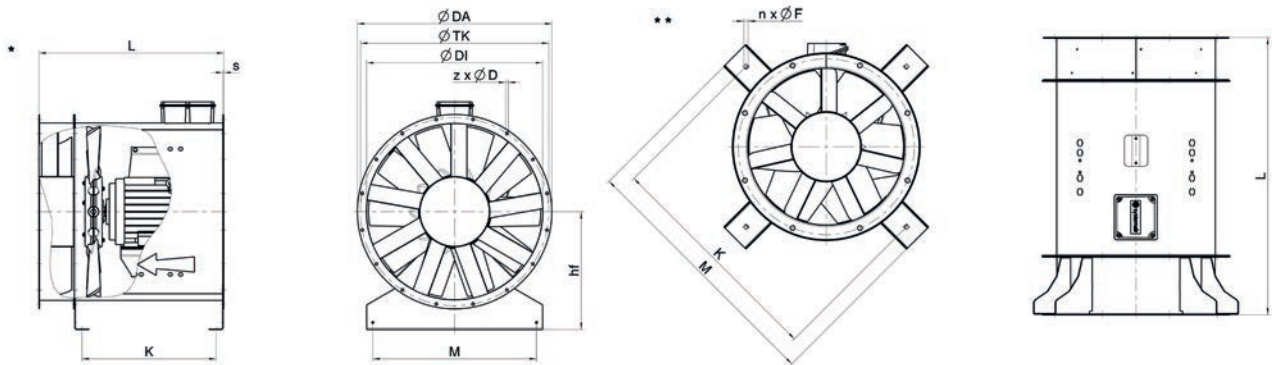
Quality

Systemair is certified according to ISO 9001 and ISO 14001. The Systemair quality system is regularly monitored by TÜV Süd.



You can find more informations in our online-catalogue www.systemair.com

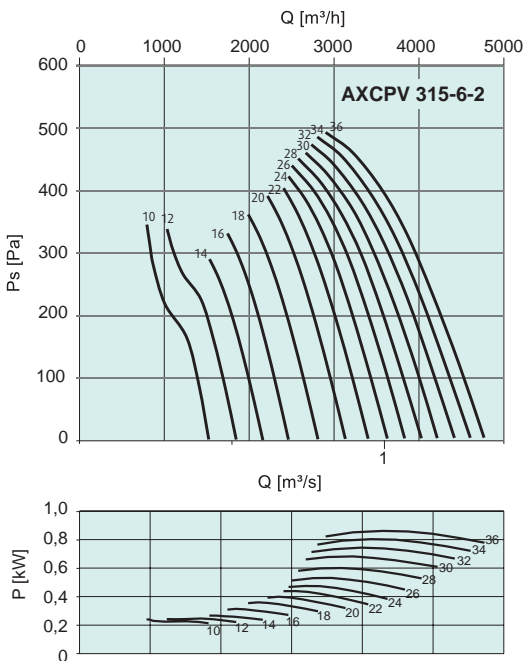
Dimensions



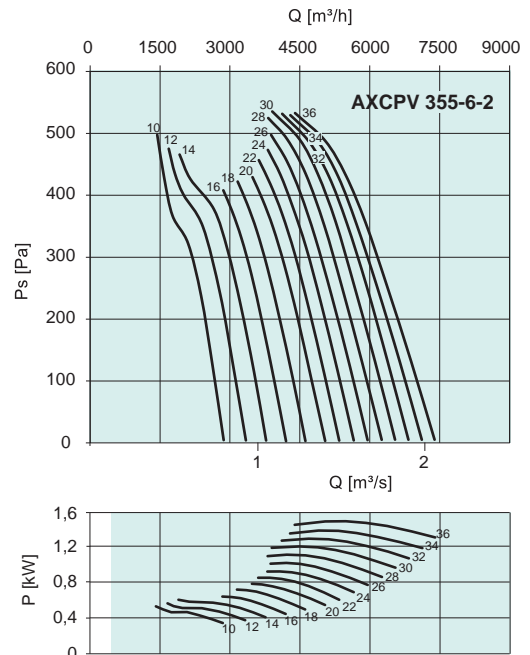
AXCPV	* Airflow direction: S									** Airflow direction: SO / SU (SO = airflow up; SU = airflow down)				
	ØDA	ØDI	hF	ØTK	M	s	z x ØD	L	K	K	M	L	s	n x ØF
AXCPV 315	395	315	225	355	265	2,5	8 x 10	550	360	355	575	705	2,5	4 x 11
AXCPV 355	435	355	25	395	305	2,5	8 x 10	550	360	395	615	705	2,5	4 x 11
AXCPV 400	480	400	280	450	350	2,5	8 x 12	575	385	450	660	730	2,5	4 x 11
AXCPV 450	530	450	315	500	400	2,5	8 x 12	625	360	500	710	780	2,5	4 x 11
AXCPV 500	590	500	335	560	440	3,0	12 x 12	665	464	560	776	820	3,0	12 x 12
AXCPV 560	650	560	375	620	500	3,0	12 x 12	660/910	424/674	838	758	810/1060	3,0	4 x 11
AXCPV 630	720	630	425	690	570	3,0	12 x 12	730/980	424/674	828	908	880/1130	3,0	4 x 11

Dimensions in mm.

Quick selection

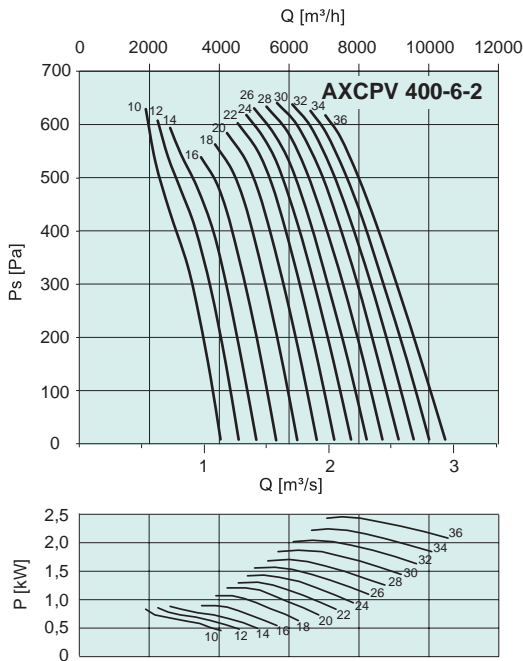


Article no.	Size *
CAXPV31501	AXC 315-6-2 (0,75kW) IE3 NL

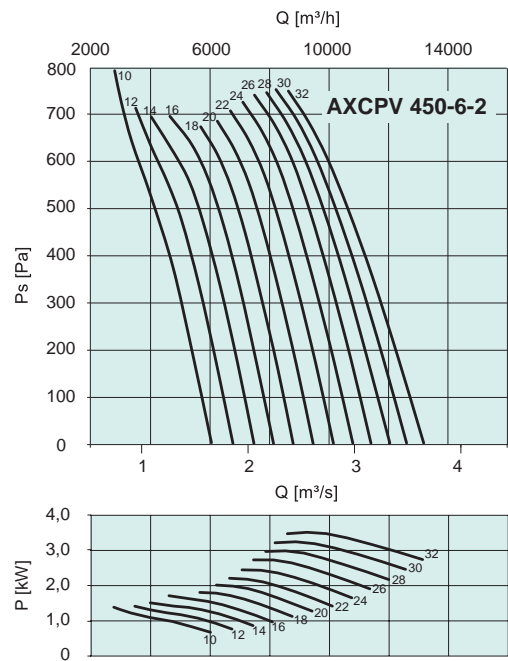


Article no.	Size *
CAXPV35501	AXC 355-6-2 (0,75kW) IE3 NL
CAXPV35502	AXC 355-6-2 (1,1kW) IE3 NL
CAXPV35503	AXC 355-6-2 (1,5kW) IE3 NL

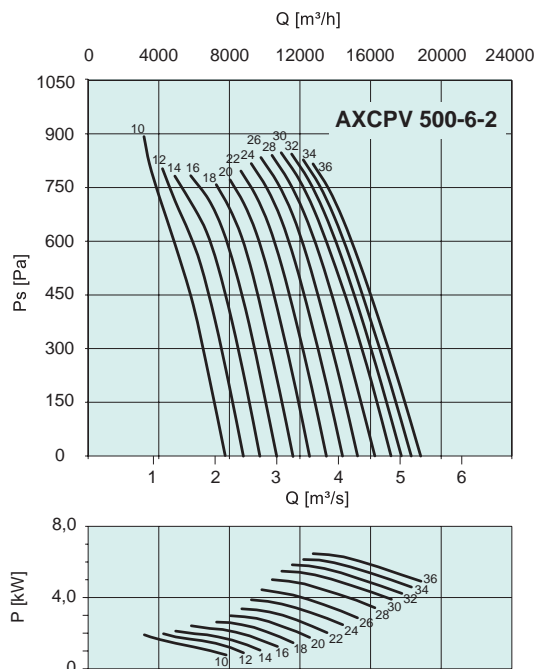
Quick selection



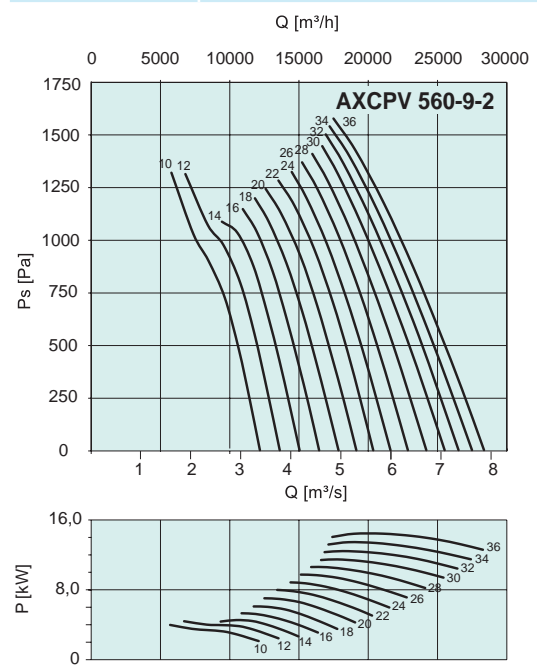
Article no.	Size
CAXPV40001	AXC 400-6-2 (0,75kW) IE3 NL
CAXPV40002	AXC 400-6-2 (1,1kW) IE3 NL
CAXPV40003	AXC 400-6-2 (1,5kW) IE3 NL
CAXPV40004	AXC 400-6-2 (2,2kW) IE3 NL



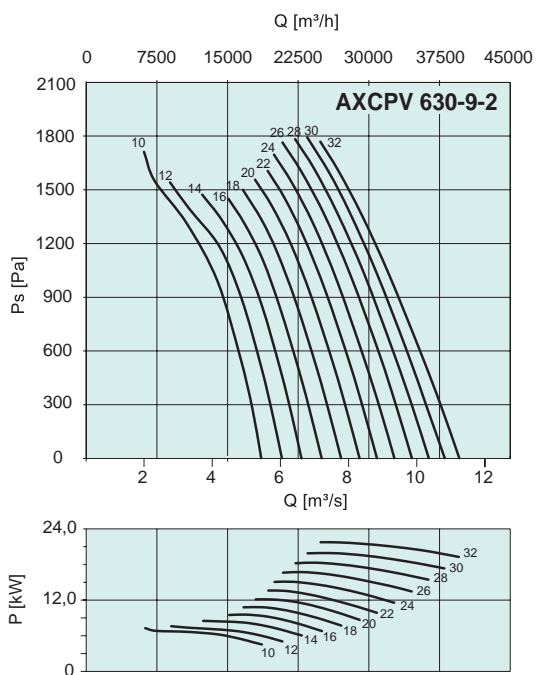
Article no.	Size
CAXPV45001	AXC 450-6-2 (0,75kW) IE3 NL
CAXPV45002	AXC 450-6-2 (1,1kW) IE3 NL
CAXPV45003	AXC 450-6-2 (1,5kW) IE3 NL
CAXPV45004	AXC 450-6-2 (2,2kW) IE3 NL
CAXPV45005	AXC 450-6-2 (3,0kW) IE3 NL
CAXPV45006	AXC 450-6-2 (4,0kW) IE3 NL



Article no.	Size
CAXPV50001	AXC 500-6-2 (1,1kW) IE3 NL
CAXPV50002	AXC 500-6-2 (1,5kW) IE3 NL
CAXPV50003	AXC 500-6-2 (2,2kW) IE3 NL
CAXPV50004	AXC 500-6-2 (3,0kW) IE3 NL
CAXPV50005	AXC 500-6-2 (4,0kW) IE3 NL
CAXPV50006	AXC 500-6-2 (5,5kW) IE3 NL
CAXPV50007	AXC 500-6-2 (7,5kW) IE3 NL



Article no.	Size
CAXPV56001	AXC 560-9-2 (2,2kW) IE3 NL
CAXPV56002	AXC 560-9-2 (4,0kW) IE3 NL
CAXPV56003	AXC 560-9-2 (5,5kW) IE3 NL
CAXPV56004	AXC 560-9-2 (7,5kW) IE3 NL
CAXPV56005	AXC 560-9-2 (11,0kW) IE3 NL
CAXPV56006	AXC 560-9-2 (15,0kW) IE3 NL



Article no.	Size
CAXPV63001	AXC 630-9-2 (2,2kW) IE3 NL
CAXPV63002	AXC 630-9-2 (3,0kW) IE3 NL
CAXPV63003	AXC 630-9-2 (4,0kW) IE3 NL
CAXPV63004	AXC 630-9-2 (5,5kW) IE3 NL
CAXPV63005	AXC 630-9-2 (7,5kW) IE3 NL
CAXPV63006	AXC 630-9-2 (11,0kW) IE3 NL
CAXPV63007	AXC 630-9-2 (15,0kW) IE3 NL
CAXPV63008	AXC 630-9-2 (18,5kW) IE3 NL



AXC (B) / AXR (B)

Smoke extract axial fans



AXC (B), AXR (B) smoke extract axial fans certified for **300 °C / 120 min.** in accordance with EN 12101-3

- AXC with aerofoil impeller, adjustable pitch angle for maximum efficiency
- Hub and blades are manufactured from highly resistant aluminium alloy
- Terminal box in IP65 mounted at the outside of the casing for easy wiring
- Suitable for operating temperatures of up to -20 / +55 °C continuous or once for 300 °C / 120 min.
- Inspection hole to verify correct direction of rotation
- Truly reversible version AXR (B) on request

The Systemair AXC (B) / AXR (B) range of long cased smoke extract axial fans is available in sizes from 315 up to 1,600 mm nominal diameter. The adjustable pitch angle setting offers a wide performance and maximum flexibility to match precisely individual airflow requirements. The AXC (B) and AXR (B) axial fans have been performance tested in accordance with DIN ISO 5801, DIN 24163 and AMCA 210-07 on the Systemair fan test rig. High temperature testing in accordance with EN 12101-3. All AXC (B) fans are labeled with the CE mark.

High efficiency impellers

The aerodynamically-shaped impellers made from high-strength aluminium cast alloy with flexible blade arrangements provide optimum efficiency. A range of different blade/hub configurations enables high operating pressures.

Sturdy casing

The housing is made from hot-dip galvanised sheet steel in accordance with DIN EN ISO 1461 (AXC(B)-EK made from pre-galvanised steel sheet). The flanges pressed onto both sides in accordance with Eurovent 1/2 provide additional stability. Standard version as long shaft housing.

Motors

IP54/55 motors, insulation class H, according to EN 60034-5. Motor in the airflow. Available as single and dual speed motors (switchable poles). Application with frequency converter for standard ventilation available on request. (IE2 motor available on request).

Multi stage fans

For higher pressure drops two stage fans are offered. Two fans in series increase the available static operational pressure.

Quality

Systemair is certified according to ISO 9001 and ISO 14001.

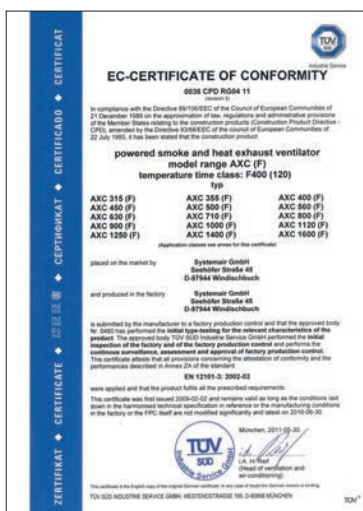
The Systemair quality system is regularly monitored by TÜV Süd.



Warranty

Systemair offers a three year warranty on all AXC (B) and AXR (B) fan models. The Systemair general terms and conditions apply.

You can find performance curves in our online-catalogue www.systemair.com



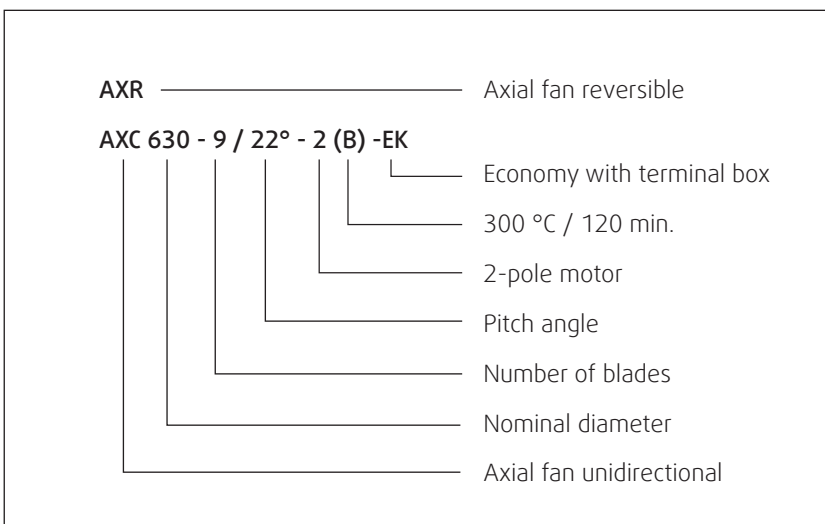


References: Mercedes-Benz Arena in Stuttgart, Germany

Mercedes-Benz Arena with approximately 60,000 seats is used for concerts of different global super stars such as Rolling Stones, Genesis and Jon Bon Jovi. In order to host other sporting events as handball, basketball or volleyball there was built a new event hall under the stands of the soccer stadium. The so-called SCHARrena is about 7,900 square meters and

up to 2,000 spectators are able to follow the different matches. Systemair delivered 17 axial fans for smoke extraction and ventilation in case of fire. Besides 34 speed controlled circular duct fans and two MUB EC fans of Systemair are installed in the Mercedes-Benz arena and SCHARrena.

Ordering code



AXC (F) / AXR (F)

Smoke extract axial fans



AXC (F), AXR (F) Smoke extract axial fans certified for **400 °C / 120 min.** in accordance with EN 12101-3

- AXC with aerofoil impeller, adjustable pitch angle
- Hub and blades are manufactured from highly resistant aluminium alloy
- Terminal box in IP65 mounted at the outside of the casing for easy wiring
- Suitable for operating temperatures of up to -20 / +55 °C continuous or once for 400 °C / 120 min.
- Inspection hole to verify correct direction of rotation
- Truly reversible version AXR (F) on request
- All aluminium blades for the AXR (F) are x-rayed before assembly to ensure that the quality of the material is perfect ("X-rayed")

The Systemair AXC (F) / AXR (F) range of long cased smoke extract axial fans is available in sizes from 315 up to 1,600 mm nominal diameter. The adjustable pitch angle setting at the factory offers a wide performance and maximum flexibility to match precisely individual airflow requirements. The AXC (F) / AXR (F) axial fans have been performance tested in accordance with DIN ISO 5801, DIN 24163 and AMCA 210-07 on the Systemair fan test rig. High temperature testing in accordance with EN 12010-3. All AXC (F) / AXR (F) fans are labeled with the CE mark.

High efficiency impellers

The AXC aerofoil aluminium impellers can be offered with full or fractional solidities, maximum efficiencies can be obtained.

Sturdy casing

AXC (F) / AXR (F) axial fan casings are heavy gauge, hot dip galvanized, with spun flanges for high rigidity. Long cased execution as standard range.

Motors

Motor in the air stream. Frequency converter controllable only for standard ventilation on request. Single or two speed motors.

Multi stage fans

For higher pressure drops two stage fans are offered. Two fans in series increase the available static operational pressure.

Quality

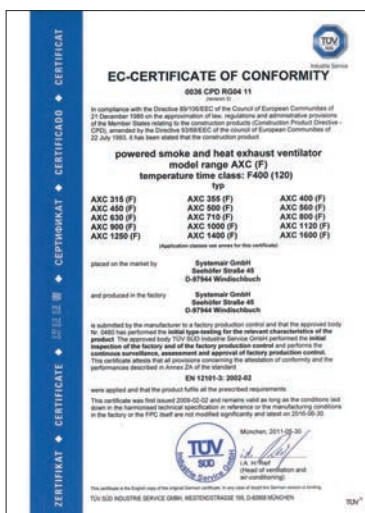
Systemair is certified according to ISO 9001 and ISO 14001. The Systemair quality system is regularly monitored by TÜV Süd.

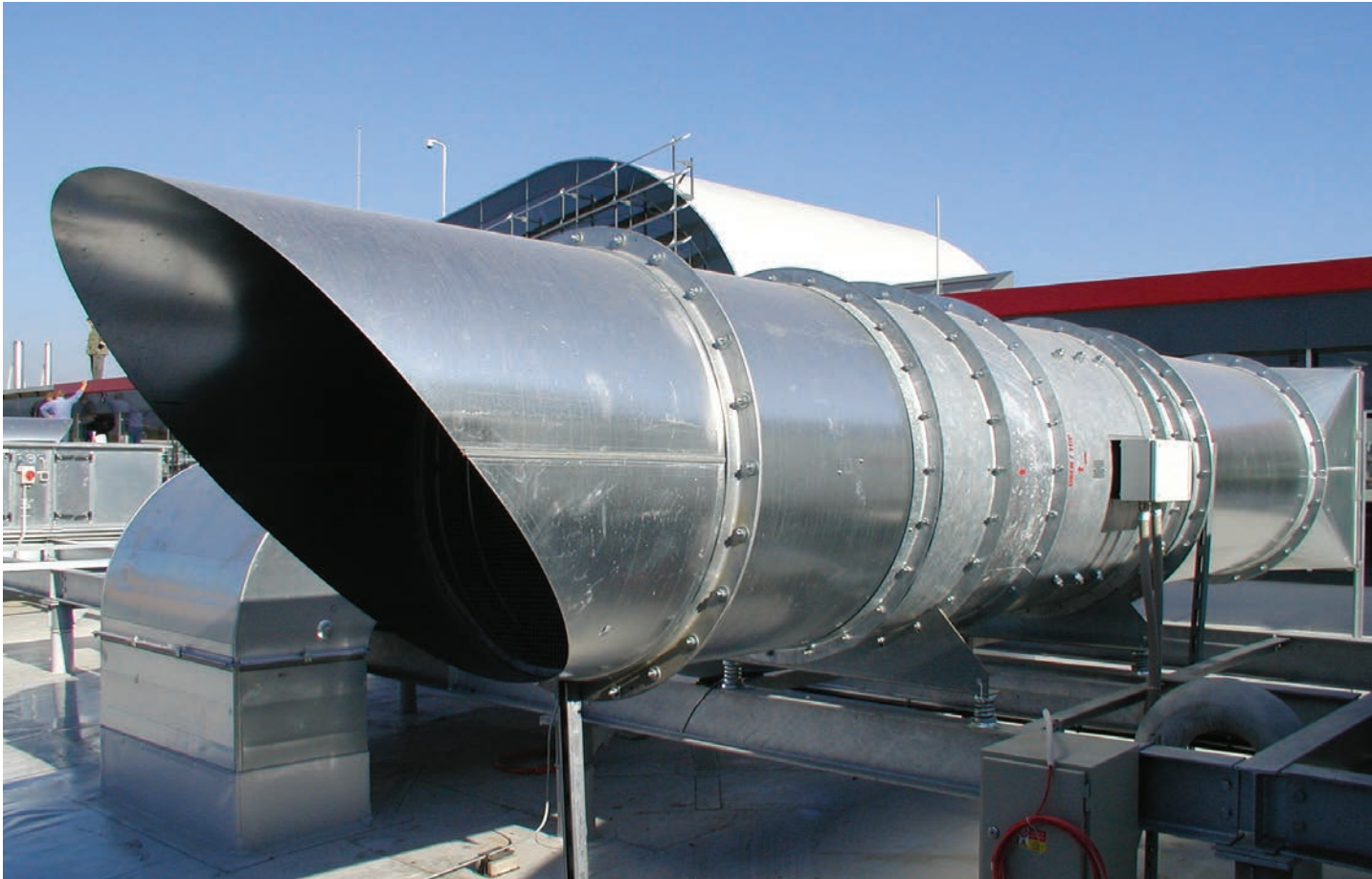


Warranty

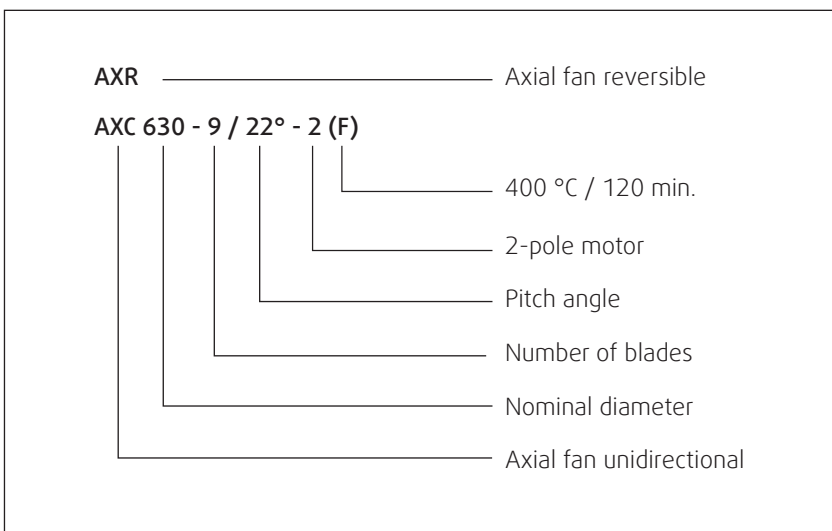
The Systemair general terms and conditions apply.

You can find performance curves in our online-catalogue www.systemair.com





Ordering code



AXCBF



- Aerofoil impeller
- Die cast aluminium hub and blades
- Suitable for operating temperatures of up to 200 °C
- Maximum ambiente air temperature 55 °C

Thermo axial fans

The Systemair AXCBF range of bifurcated medium pressure axial fans has been developed for applications with an atmosphere which would either require special motors or reduce the lifetime of a standard motor. The motors of AXCBF are out of the airflow. Available in sizes from 250 up to 800 mm nominal diameter.

Sturdy casing

Dual-shaft housing made from hot-dip galvanised sheet steel in accordance with DIN EN ISO 1461. The motor shaft can be opened from both sides for ease of access to the motor connection box. The motor is completely separate from the airflow. Terminal box on the motor.

Motors

Three-phase motor according to IEC standard. IP55 degree of protection, insulation class F, according to EN 60034-5. The motors are equipped with PTC thermistors for optimum motor protection. Available as a single and dual speed motor (switchable poles). Speed control of the standard motors is possible using a frequency converter.

Quality

Systemair is certified according to ISO 9001 and ISO 14001.

The Systemair quality system is regularly monitored by TÜV Süd.



Warranty

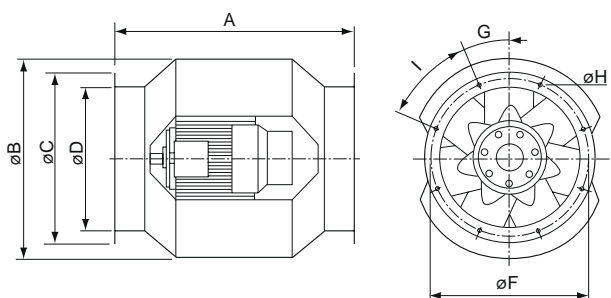
The Systemair general terms and conditions conditions apply.

You can find performance curves in our online-catalogue www.systemair.com

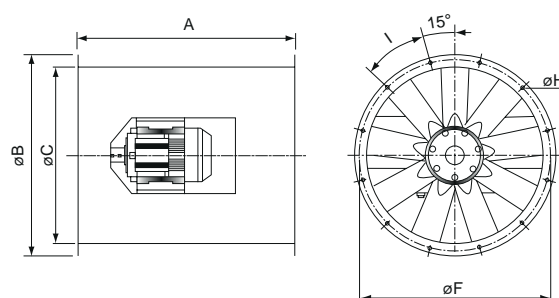


Dimensions

AXCBF 250 - AXCBF 500



AXCBF 630 - AXCBF 800



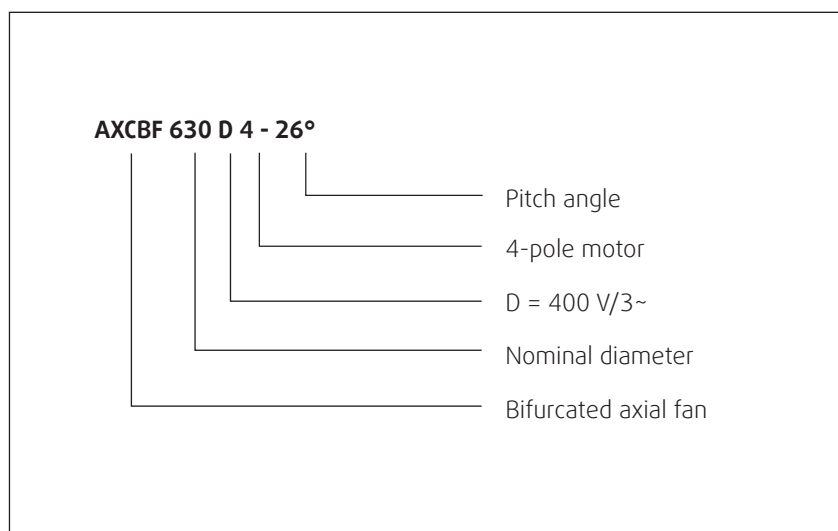
AXCBF	A	ø B	ø C	ø D	ø F	G	ø H	I
AXCBF 250	535	448	328	250	302	22.5°	10	8x45°
AXCBF 315	535	452	385	315	355	22.5°	10	8x45°
AXCBF 400	625	585	480	400	450	22.5°	10	8x45°
AXCBF 500 long version	710	695	590	500	560	15°	12	12x30°
AXCBF 500 short version	660	695	590	500	560	15°	12	12x30°
AXCBF 630	790	728	630	-	690	15°	12	12x30°
AXCBF 800	880	890	800	-	860	11.25°	12	16x22,5°

Dimensions in mm.

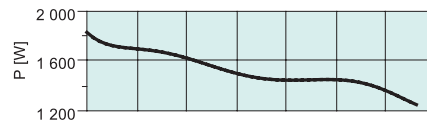
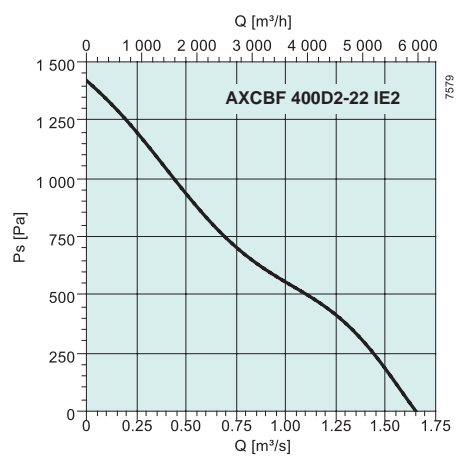
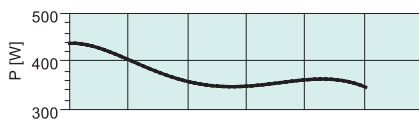
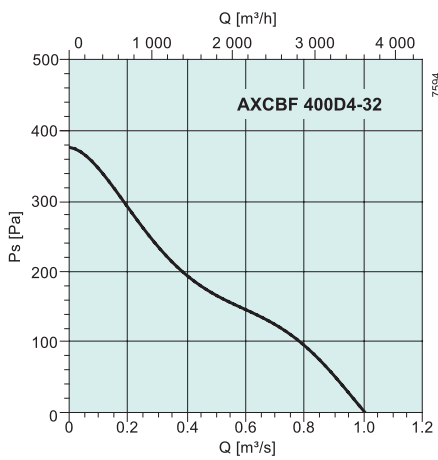
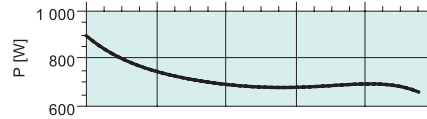
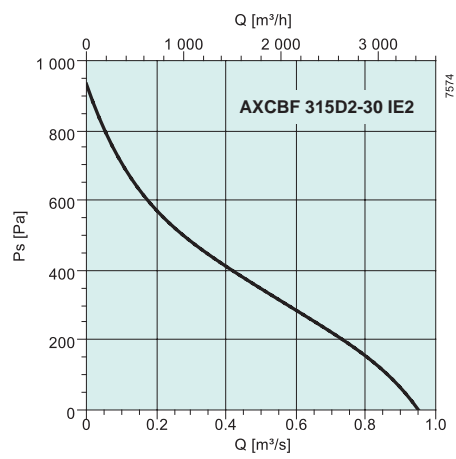
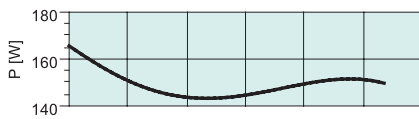
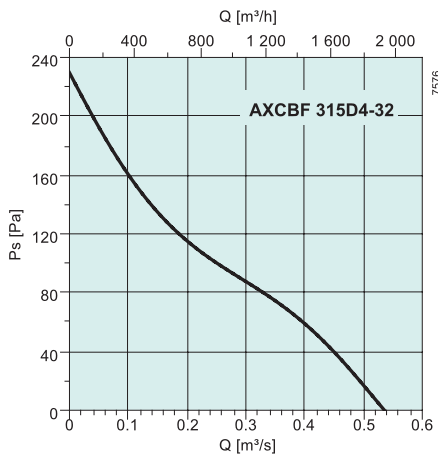
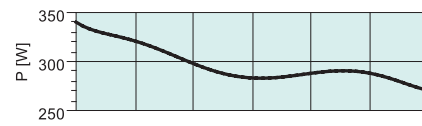
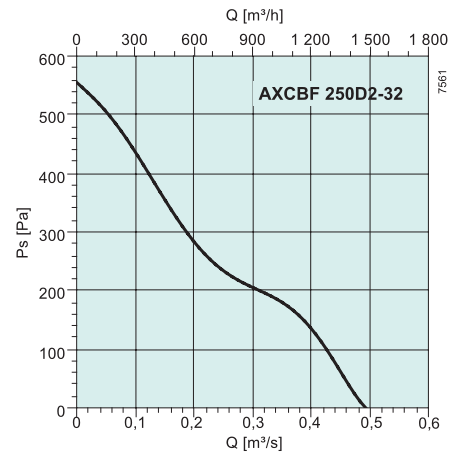
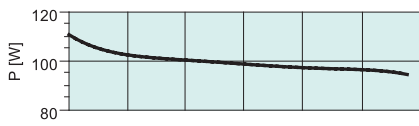
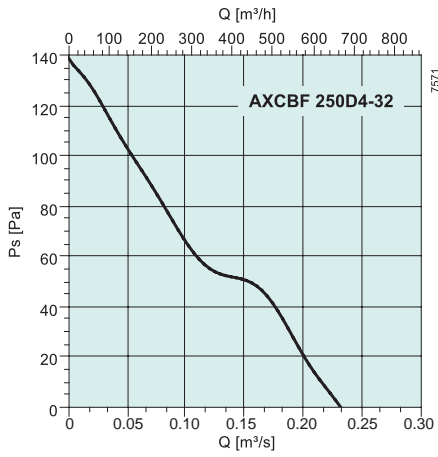
Standard range AXCBF

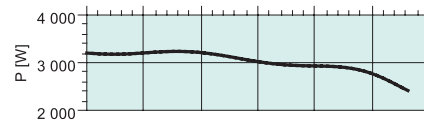
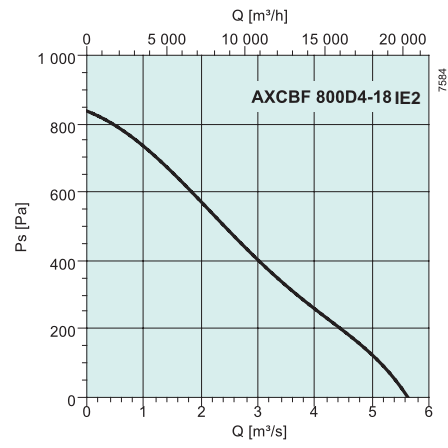
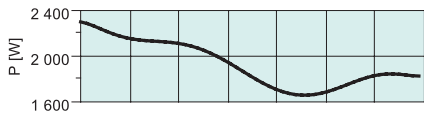
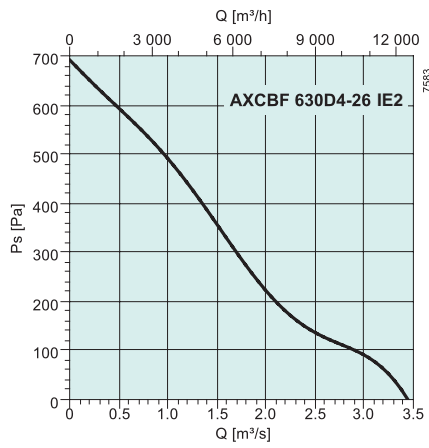
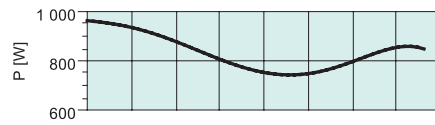
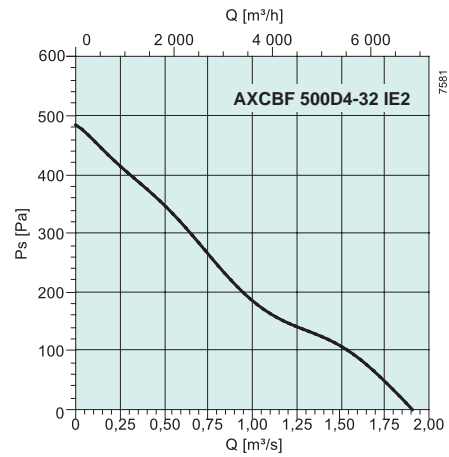
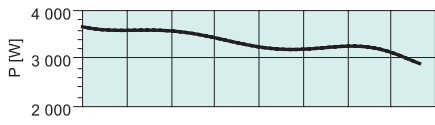
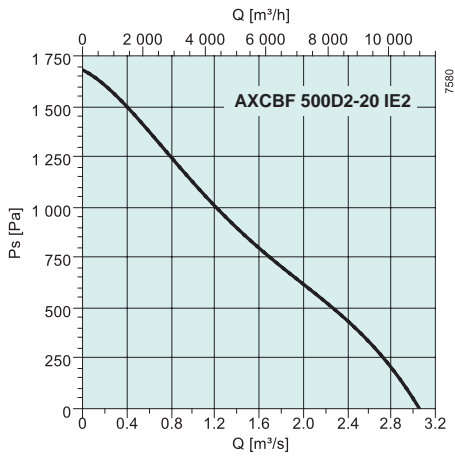
Model	Article No.	Voltage/frequency [V/Hz]	Installed motor [kW]	Integrated motor protection
AXCBF 250D2-32	32456	400/50	0,37	PTC
AXCBF 250D4-32	32458	400/50	0,25	PTC
AXCBF 315D2-30 IE2	34146	400/50	0,75	PTC
AXCBF 315D4-32	32462	400/50	0,25	PTC
AXCBF 400D2-22 IE2	34147	400/50	2,2	PTC
AXCBF 400D4-32	32483	400/50	0,55	PTC
AXCBF 500D2-20 IE2	34148	400/50	4,0	PTC
AXCBF 500D4-32 IE2	34152	400/50	1,1	PTC
AXCBF 630D4-26 IE2	34155	400/50	2,2	PTC
AXCBF 800D4-18 IE2	34156	400/50	4,0	PTC

Ordering code



Quick selection





AXC-EX / AXCBF-EX

Explosions proof axial fans



AXC-EX



AXCBF-EX

Explosion proof axial fans with ATEX certification in accordance with RL 94/9/EG, EN 14986 and 13463-1

- Explosion classification II 2G c Ex d IIC T4
- Die cast aluminium hub and blades
- Casing made of hot dip galvanized steel to DIN EN ISO 1461
- Flanges to Eurovent 1/2
- Three phase motors, IP55, insulation class F, in accordance with EN 60034. Supplied with Ex-terminal box mounted at the outer side of the casing (AXC-EX). Admissible ambient temperatures from -20 °C to +40 °C, other temperatures on request
- Motor Ex d speed controllable by frequency converter
- Motor EX e on request
- AXCBF-EX with motor outside the airstream

Casing

Systemair AXC-EX and AXCBF-EX range of long cased medium pressure axial fan, casings are heavy gauge, hot dip galvanized, spun flanges for high rigidity, to Eurovent 1/2.

Motors

Motor Ex d speed controllable by frequency converter. Supplied with Ex-terminal box mounted at the outer side of the casing (AXC-EX).

Impeller

Aerofoil impeller. Die cast aluminium hub and blades.

Power control

Speed controllable by frequency converter.

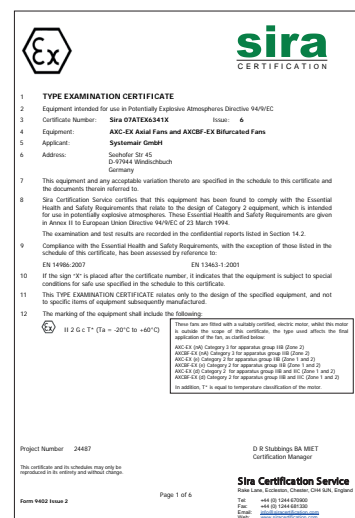
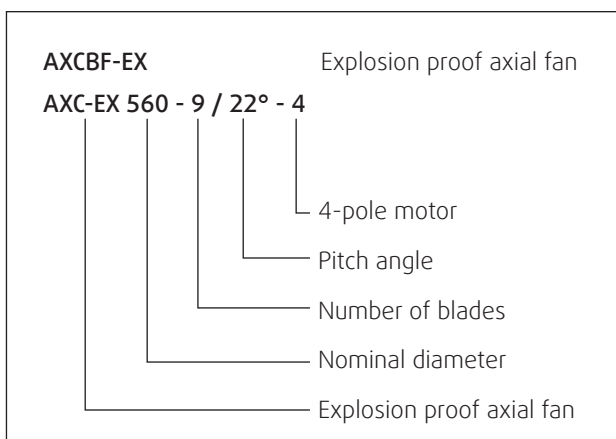
Motor protection

The Ex d motors are equipped with PTC thermistors for optimum motor protection.

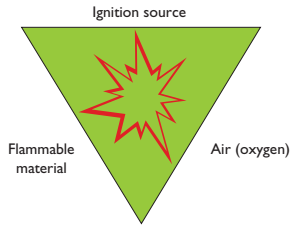
The fans could be used for zones 1 or 2, field of application II, for gases of groups IIA, IIB and IIC and temperature classes T1 to T4. The fans are classified to category 2G. The fans are certified under the no Sira 07ATEX6341X.

You can find performance curves in our online catalogue www.systemair.com

Ordering code

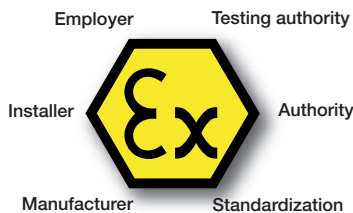


Explosion protection



Gases, vapours and mists which occur during storage, production or processing of flammable substances, together with the oxygen in the air, form an explosive atmosphere. In case this atmosphere is ignited, explosions take place which can be harmful to human beings and damage property. Ignition sources can be for example hot temperatures on surfaces, mechanically generated sparks, static electricity or electrical installations.

Protective standards have been developed in a lot of countries to ensure a high level of safety. In the European Union regulations have been harmonized in EC directives 94/9/EG (ATEX 95, equipment directive, manufacturers or importers) and 99/92/EG (ATEX 137, workplace directive: operation of installations, users).



In short, those directives define the measures to be taken to avoid the ignition of potentially explosive atmospheres, i.e. atmospheres which could become explosive due to local and operational conditions. The required safety level depends on the danger potential in the very installation.

In the EC directives hazardous areas are divided into classes/zones, defining the probability of an explosive atmosphere (in accordance with IEC 60079-10).

	Zone	Duration of the occurrence of an explosive atmosphere	Equipment category
Gases, vapours, mists	0	continuously, for a long period, frequently	1G
	1	occasionally	2G
	2	rarely and for a short period	3G

The NEC (National Electrical Code) of USA and the CEC (Canadian Electrical Code) of Canada divide into Classes and Divisions, which might deviate from the EC directives. Gases, vapours or mists are classified in Class 1, then divided into Divisions 1 or 2, then into Gas Groups. Please pay attention which standard has been applied (EC directives or NEC/CEC). Manufacturers of equipment with a potential ignition source (like electric motors, rotating parts) have to ensure that the equipment fulfils the safety requirements given in the relevant directives and codes (grouping and category).

The EC directives then divide the equipment into Groups. Equipment group I covers mining systems, where a very high or high degree of safety is required. Equipment group II covers other explosive areas and is divided into categories from category 1 (very high degree of safety, even for independently occurring faults), category 2 (high degree of safety, even for occurrence of a fault) and category 3 (normal degree of safety – in normal operation conditions). **Electrical equipment of category 2 must undergo an EC type examination, carried out by a notified body.** For electrical equipment of category 3 and non-electrical equipment the manufacturer is authorized to document conformity with the requirements of the EC directive. CE marking of the equipment confirms that it has been manufactured in compliance with all relevant EC directives.

Equipment group II is further classified into groups. The IEC system is applied in Europe, where IIA is the lowest hazardous gas group, IIB medium and IIC the most group. The NEC directives of North America define it the opposite way, where Group A is the most hazardous gas group.

Temperature classes

Temperature classes determine the maximum surface temperature of a product at an ambient temperature of max. +40 °C, for example an electrical apparatus, which should always be lower than the ignition temperature of the gas/air or vapour/air mixture in which it is used. The ignition temperature is the lowest temperature at which a hot surface can ignite a respective explosive atmosphere. Flammable gases and vapours are classified into temperature classes according to their inflammability. Temperature classes range from T1 to T6.

Max. surface temperature for individual temperature classes

Temperature class	Ignition temperature of different gas mixtures	Max. surface temperature of electrical equipment
T1	> 450°C	450 °C
T2	> 300...> 450°C	300 °C
T3	> 200...> 300°C	200 °C
T4	> 135...> 200°C	135 °C
T5	> 100...> 135°C	100 °C
T6	> 85...> 100°C	85 °C

Groups and temperature classes, some examples:

Material	Explosive limit (Vol. %, LEL-UEL)*	Temperature class	Groups (IEC)
Propane	1.7 - 10.8	T1	IIA
Ethanol	3.3 - 19	T2	IIB
Hydrogen	4 - 77	T1	IIC
Acetylene	2.3 - 100	T2	IIC
Methane	4.4 - 17	T1	IIA

*extract from the table flammable liquids and gases by E.Brandes and W. Möller, UEG - OEG (lower explosive limit, upper explosive limit)

Type of ignition protection	Nomenclature	Region	Installation location	Principle	Standard applied
Non sparking apparatus „nA“	Ex nA	IEC, EU	Zone 2	Prevent occurrence of sparks	IEC/EN 60079-15
Increased safety „e“	Ex e	IEC, EU	Zone 1	Prevent excessive temperatures and the occurrence of sparks	IEC/EN 60079-7
Flameproof enclosure "d"	Ex d	IEC, EU	Zone 1	Enclosure withstanding an explosion from within the apparatus	IEC/EN 60079-1

Explosion proof axial fans AXC-EX, AXCBF-EX

Quality

Systemair is ISO 9001, 14001 and DIN EN ISO/IEC 80079-34 approved.

Warranty

Systemair offers a three year warranty on all AXC-EX/ AXCBF-EX fan models. The Systemair general terms and conditions apply.

Prototype testing institute

SIRA Test and certification Ltd.
Rake Lane, Ecclestone
Chester; CH4 9JN; England
Registration no. 0518

Inspection certificate no. of EC
prototype testing
(SIRA 07ATEX6341X)

Monitoring institute

ZELM Ex e. K.
Prüf- und Zertifizierungsstelle
Siekgraben 56

38124 Braunschweig
Germany
Registration no. 0820

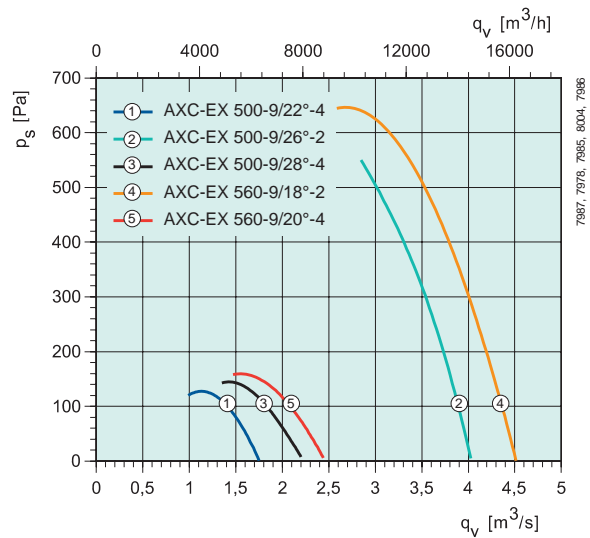
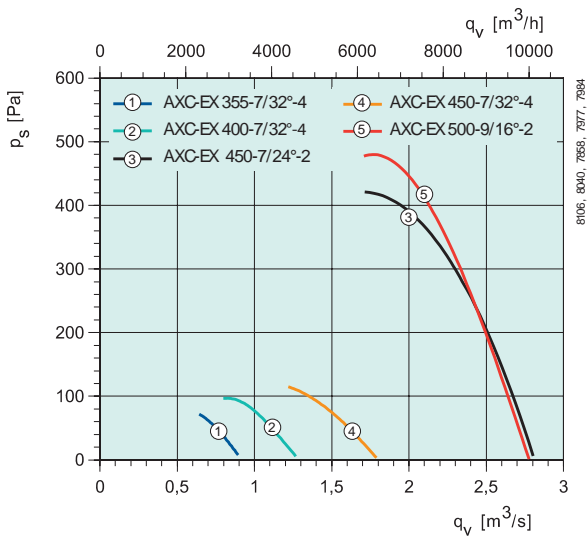
Standard AXC-EX (400 V / 50 Hz)

Size	Article no.	Pole	Pitch angle	Motor [kW]
355	33007	4	32°	0.37
355	35758	4	12°	0.37
400	33008	4	32°	0.37
400	35759	4	14°	0.37
450	33001	2	24°	2.2
450	33009	4	32°	0.55
450	35760	2	17°	1.5
450	35761	2	28°	3
450	35762	4	14°	0.23
500	33002	2	16°	3
500	33010	4	22°	0.55
500	35763	2	36°	7.5
500	33003	2	26°	5.5
500	33011	4	28°	0.75
560	33004	2	18°	5.5
560	33012	4	20°	0.75
560	33005	2	24°	7.5
560	33013	4	26°	1.1
560	35764	2	30°	11
630	33006	2	16°	7.5
630	33014	4	18°	1.1
630	33015	4	30°	3
630	35765	2	20°	11
710	33016	4	30°	4
710	35766	4	26°	2.2
800	37334	4	28°	5.9
800	33017	4	18°	4
800	33018	4	36°	7.5
900	33019	4	18°	7.5
900	33020	4	26°	11
900	35767	4	30°	15

Standard AXCBF-EX (400 V / 50 Hz)

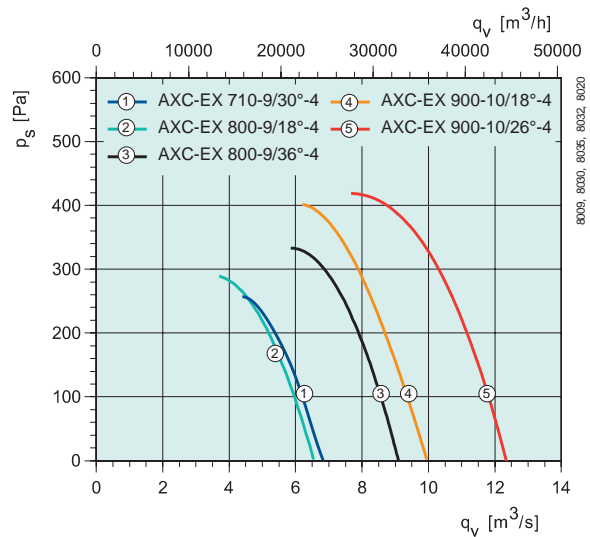
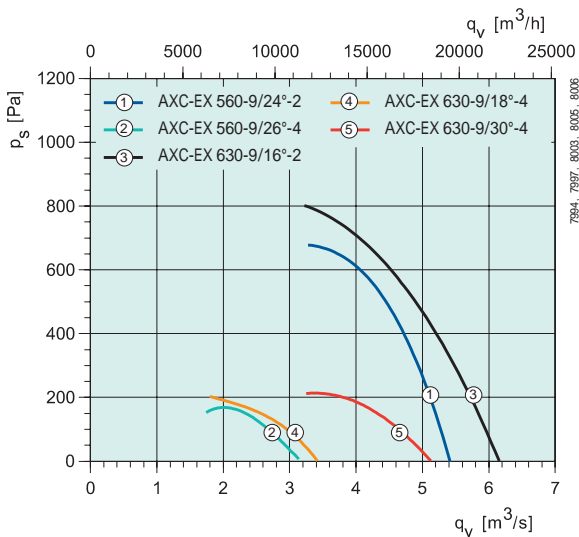
Size	Article no.	Pole	Pitch angle	Motor [kW]
250	33021	2	28°	0.37
315	33022	2	30°	0.75
400	33023	2	22°	2.2
500	33024	2	18°	2.2
250	33025	4	28°	0.25
315	33026	4	32°	0.25
400	33027	4	32°	0.55
500	33028	4	30°	1.1
630	33029	4	26°	2.2
800	33030	4	18°	4

Quick selection AXC-EX



dB(A)	Tot	Frequency bands [Hz]							
L_{WA} Inlet/Outlet	63	125	250	500	1k	2k	4k	8k	
AXC-EX									
355-7/32°-4	74	69	68	69	68	67	64	59	53
400-7/32°-4	77	72	71	72	71	70	67	62	56
450-7/24°-2	96	91	86	89	91	88	88	84	78
450-7/32°-4	82	77	76	77	76	75	72	67	61
500-9/16°-2	100	95	90	93	95	93	92	88	82

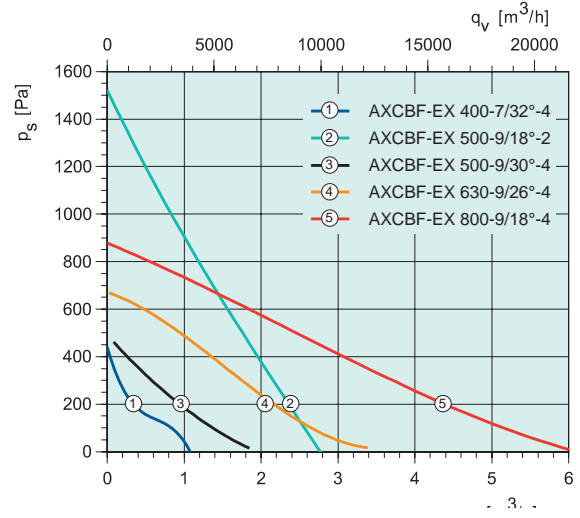
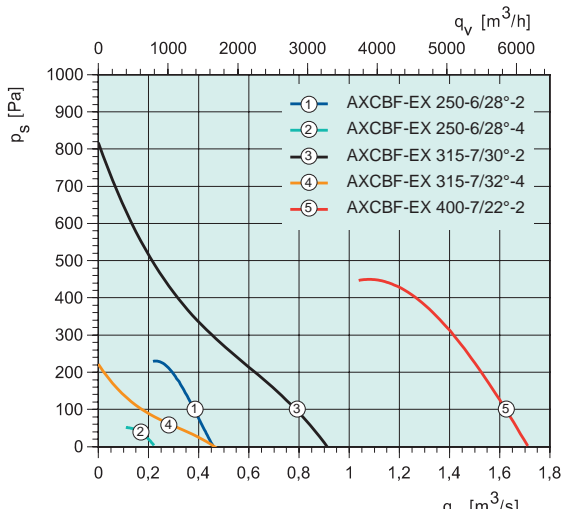
dB(A)	Tot	Frequency bands [Hz]							
L_{WA} Inlet/Outlet	63	125	250	500	1k	2k	4k	8k	
AXC-EX									
500-9/22°-4	86	81	80	81	80	79	76	71	65
500-9/26°-2	102	97	92	95	97	95	94	90	84
500-9/28°-4	87	82	81	82	81	80	77	72	66
560-9/18°-2	106	101	96	99	101	99	98	94	88
560-9/20°-4	91	86	85	86	85	84	81	76	70



dB(A)	Tot	Frequency bands [Hz]							
L_{WA} Inlet/Outlet	63	125	250	500	1k	2k	4k	8k	
AXC-EX									
560-9/24°-2	108	103	98	101	103	101	100	96	90
560-9/26°-4	93	88	87	88	87	86	83	78	72
630-9/16°-2	111	106	101	104	106	104	103	99	93
630-9/18°-4	96	91	90	91	90	89	86	81	75
630-9/30°-4	99	94	93	94	93	92	89	84	78

dB(A)	Tot	Frequency bands [Hz]							
L_{WA} Inlet/Outlet	63	125	250	500	1k	2k	4k	8k	
AXC-EX									
710-9/30°-4	93	88	87	88	87	86	83	78	72
800-9/18°-4	97	92	91	92	91	90	87	82	76
800-9/36°-4	100	95	94	95	94	93	90	85	79
900-10/18°-4	101	91	89	95	96	94	91	86	80
900-10/26°-4	104	94	97	99	97	96	92	86	80

Quick selection AXCBF-EX



dB(A)	Tot	Frequency bands [Hz]						
L_{WA} Inlet/Outlet	63	125	250	500	1k	2k	4k	8k
AXCBF-EX								
250-6/28°-2	86	79	76	79	79	75	73	71
250-6/28°-4	71	62	63	67	59	58	56	53
315-7/30°-2	86	81	76	79	81	79	78	74
315-7/32°-4	71	66	65	66	65	64	61	56
400-7/22°-2	93	88	83	86	88	86	85	81

dB(A)	Tot	Frequency bands [Hz]						
L_{WA} Inlet/Outlet	63	125	250	500	1k	2k	4k	8k
AXCBF-EX								
400-7/32°-4	82	77	76	77	76	75	72	67
500-9/18°-2	101	90	88	91	95	96	94	92
500-9/30°-4	91	86	85	86	85	84	81	76
630-9/26°-4	93	88	87	88	87	86	83	78
800-9/18°-4	98	93	92	93	92	91	88	83

Jet fans for Car Park Ventilation

Custom-designed systems



Jet-Ventilator AJR-TR

Thrust: 23-55 N



Jet-Ventilator AJ8

Thrust: 23-80 N



Jet-Ventilator IV

Thrust: 50-85 N



Jet-Ventilator IV smart

Thrust: 12 N

Improved air quality, lower investment and operational costs, as well as optimum safety in the case of fire are only a few of the advantages of a jet fan system for underground car parks. As system supplier, Systemair offers all the necessary components from a single source and customised especially for the project: jet fans, ventilation fans, as well as the control system.

Already in the planning phase, we provide support to our customers through valuable CFD simulations (Computational Fluid Dynamics), in order to ensure efficient operation when required. Systemair jet fans are tested according to EN 12101-3 and correspond to the temperature class F300 – 300 °C / 120min, and F400 – 400 °C / 120 min.

You can find more jet fans in our online catalogue www.systemair.com



Jet Fan Systems

You can find more information about the Systemair jet fan systems in our catalogue.



Reference: Car Park Römer in Frankfurt, Germany

Visitors to central Frankfurt can now park in the completely renovated Römer car park with approx. 500 modern parking spaces.

A total of 54 AJ8 and IV series jet fans were installed by Systemair to ventilate the new car park. Ten AXC 630 and AXC 500 series supply air duct fans provide the fresh air. The contaminated air is removed by a total of twelve AXC 630 series extract air duct fans, via the roof.



Tunnel fans

Heavy duty complete systems

Our tunnel fans provide safety and comfort in road, metro and railway tunnels. The fans demonstrate their power right from the construction phase of the tunnel project and aerate the building site with fresh air.

Tunnel fans extract exhaust gases, dust and heat to the outside and provide a clear view and acceptable conditions for men and machine. In case of fire they keep escape and rescue routes free from smoke gases and heat. Our tunnel smoke extract fans are tested according to EN 12101-3 and are temperature resistant up to 400 °C for 120 min. As a contemporary solution for demanding requirements on the market, Systemair offers complete systems including frequency converters, filters, fans and accessories. Fans can be realized with diameters up to 2,24 m.



Axial fan AXC / AXR

Single and multiple level



Tunnel-Jet fan AJ

Thrust up to 2.300 N



Tunnel Ventilation

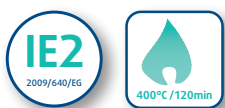
You can find more information about the Systemair tunnel ventilation systems in our catalogue.



Reference: Svtunnel, Norway

In the northeast of Stavanger the highway 13 goes along the precipitous shore of lake Tysdalsvatnet. From 2011 to 2013, a 3.5-kilometer long tunnel has been built to protect road users against avalanches. For this project, Systemair has delivered 16 tunnel jet fans, type AJ with 1,120 mm diameter.





- Vertical exhaust
- Connection according to EUROVENT 1/2
- Hub and blades made of high-strength aluminium cast alloys
- Suitable for operating temperatures up to +55 °C continuous or once for 400 °C / 120 min.
- Easy to install
- Service switch included as standard

DVAX smoke and heat extract fans are used in case of fire to extract smoke gases and also during normal working conditions for standard ventilation.

DVAX-BPF – version with integrated base plate and flange connection.

DVAX-BPN – version with integrated base plate and nozzle on the intake side.

Casing

Casing made from hot-dip galvanised sheet steel.

Motor

IE2 single speed high efficiency motor. Frequency converter controllable. Motor inside the airflow.

Impeller

The aerodynamically-shaped impellers made from high-strength aluminium cast alloy provide optimum efficiency.

Power control

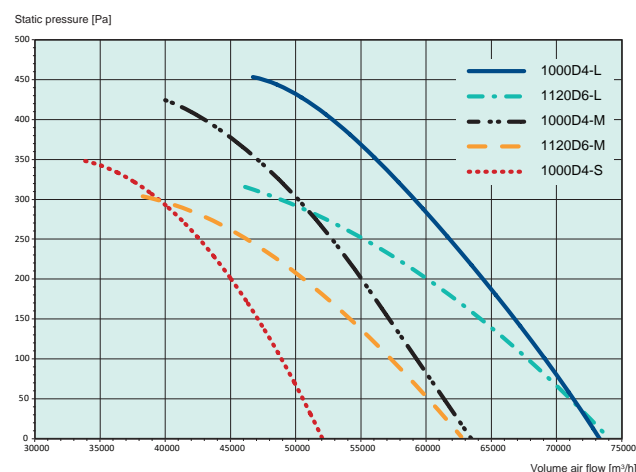
Speed controllable by frequency converter.

Motor protection

PTC thermal protection serial built-in motor.

You can find more information in our online catalogue www.systemair.com

Quick selection



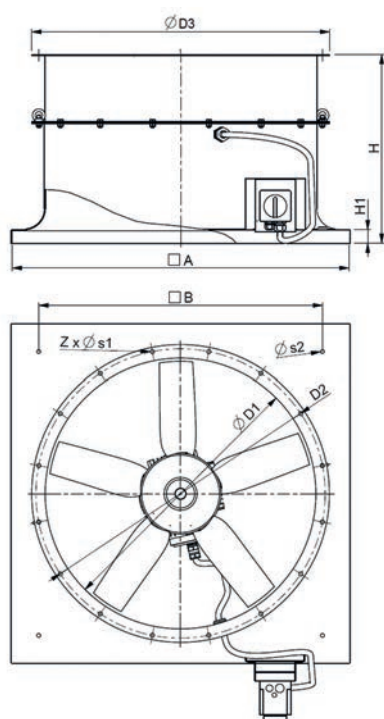
Fan pressure drop diagram without accessories.

DVAX-BPN without protection grid on the intake side.

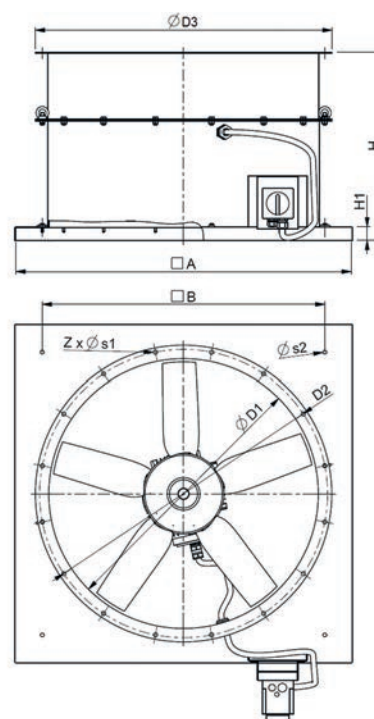
DVAX-BPF with connected duct system (duct system pressure drop not included).

Dimension

DVAX-BPN



DVAX-BPF



Typ	$\varnothing D1$	$D2$	$Z \times \varnothing s1$	$\varnothing D3$	A	B	$\varnothing s2$	H	H1
DVAX-BPN/BPF 1000D4-S	1000	1070	16 x $\varnothing 15$	1101.5	1251	1050	14	700	50
DVAX-BPN/BPF 1000D4-M	1000	1070	16 x $\varnothing 15$	1101.5	1251	1050	14	700	50
DVAX-BPN/BPF 1000D4-L	1000	1070	16 x $\varnothing 15$	1101.5	1251	1050	14	700	50
DVAX-BPN/BPF 1120D6-M	1120	1190	20 x $\varnothing 15$	1237.5	1400	1320	14	750	50
DVAX-BPN/BPF 1120D6-L	1120	1190	20 x $\varnothing 15$	1237.5	1400	1320	14	750	50

Dimensions in mm.

Technical datas

DVAX		DVAX-BPN/BPF 1000D4-S	DVAX-BPN/BPF 1000D4-M	DVAX-BPN/BPF 1000D4-L	DVAX-BPN/BPF 1120D6-M	DVAX-BPN/BPF 1120D6-L
Article no. BPN		95613	95612	95611	95615	95614
Article no. BPF		95608	95607	95606	95610	95609
Voltage	V	400	400	400	400	400
Motor circuit connection		D	D	D	D	D
Frequency	Hz	50	50	50	50	50
Phase	~	3	3	3	3	3
Input power (P1)	W	8300	11900	15800	8630	12100
Nominal power at shaft (P2)	W	7500	11000	15000	7500	11000
Current	A	14.5	20.5	26.9	15.3	20.7
Starting current	A	85	142	192	116	164
Starting current (Y - D starting)	A	28	47	64	39	55
Max. airflow	m ³ /h	52000	63250	73150	62700	73900
Fan impeller speed	r.p.m.	1454	1473	1475	978	978
Weight	kg	200	253	274	293	309
Max. temperature of transported air	°C	55	55	55	55	55
Max. temp. of transported air for 120 min	°C	400	400	400	400	400
Sound pressure level at 4 m (free field)	dB(A)	86	88	89	87	83
Sound pressure level at 10 m (free field)	dB(A)	78	80	81	73	75
Insulation class	H	H	H	H	H	H
Enclosure class, motor	IP	IP55	IP55	IP55	IP55	IP55

DVAX-MRH

Roof fan



- Vertical exhaust
- Tested to 400 °C / 120 min. (F200, F300, F400) acc. to EN 12101-3 at ZAG Ljubljana
- CE-certification acc. to EN 12101-3 by BSI, UK
- IE2 single speed high efficiency motor inside
- PTC thermal protection serial built-in motor
- 24 V DC actuator for cover opening
- Indication for opened/closed cover position (floating limit switches)
- Installation on flat or inclined roof - adjustable side bars
- Can be mounted on flat surface (e.g. concrete) or through the roof
- Sucking side connection acc. Eurovent
- MRH hatch sizes 500 to 1120 available also for other smoke extract fans - AXC(B), AXC(F)
- Exhaust protective grid built-in
- Robust structure

Roof-mounted unit for mechanical smoke extract

DVAX-MRH, smoke and heat extract fans with motorised hatch roof unit are used in case of fire to extract smoke gases from rooms.

Smoke-free escape ways increase the chances to rescue people in case of fire. For installation on top of buildings up to SL 1000 and wind load WL 1500.

The hatch casing is made of hot dip galvanised steel. The hatch cover is made of AlMg3.

The casing is made as double metal layer:

- base with 120 mm
- cover with 150 mm

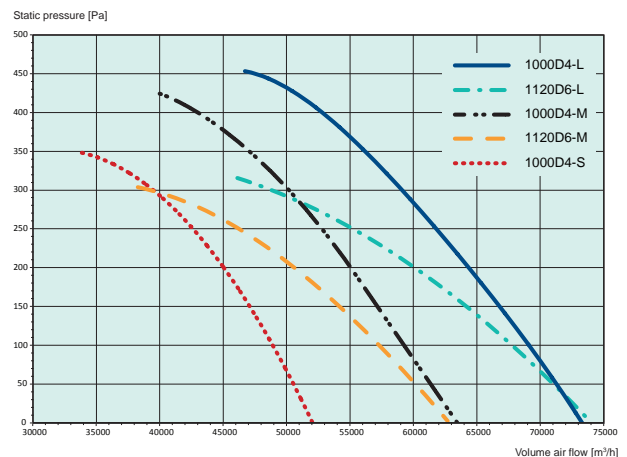
thick mineral wool insulation.

The axial fan inside steel casing has aluminium hub and blades.

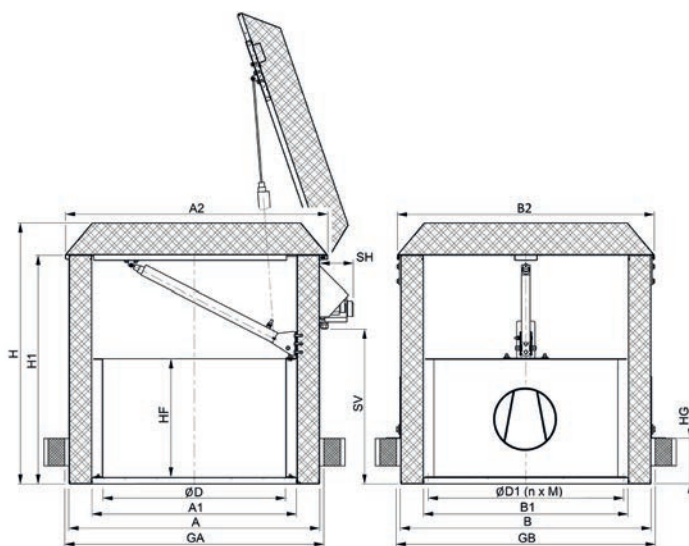
Motor directly inside airflow. The motor protection is provided by customer. Service switch serial on the hatch casing. When choosing AES exhaust air and smoke extraction control accessories, please observe serial connecting capability of the service switch of the fan (instructions). Higher connecting capability on request.

Recommended starting method for fan is 20 seconds after starting actuator for cover opening, to ensure vertical exhaust of hot gases.

Leistungsdaten



Dimensions



MRH	ØD	ØD1	n x M	A	A1	A2	B	B1	B2	GA*	GB*	HF	H1	H	SH	SV	HG
MRH 400	400	450	8xM8 (b)	1010	750	1070	1010	750	1050	1050	1050	540	1250	1410	185	850	0, 250, 500
MRH 450	450	500	8xM8 (b)	1010	750	1070	1010	750	1050	1050	1050	540	1250	1410	185	850	0, 250, 500
MRH 500	500	560	12xM8 (b)	1010	750	1070	1010	750	1050	1050	1050	540	1250	1410	185	850	0, 250, 500
MRH 560	560	620	12xM8 (b)	1010	750	1070	1010	750	1050	1050	1050	540	1250	1410	185	850	0, 250, 500
MRH 630	630	690	12xM8 (b)	1010	750	1070	1010	750	1050	1050	1050	540	1250	1410	185	850	0, 250, 500
MRH 710	710	770	16xM8 (b)	1160	900	1220	1160	910	1200	1200	1200	700	1250	1410	185	850	0, 250, 500
MRH 800	800	860	16xM8 (b)	1160	900	1220	1160	910	1200	1200	1200	700	1250	1410	185	850	0, 250, 500
MRH 900	900	970	16xM8 (n)	1380	1124	1440	1380	1124	1410	1420	1420	700	1250	1410	185	850	0, 250, 500
MRH 1000	1000	1070	16xM8 (n)	1380	1124	1440	1380	1124	1410	1420	1420	700	1250	1410	185	850	0, 250, 500
MRH 1120	1120	1190	20xM8 (n)	1540	1284	1597	1650	1394	1677	1580	1690	1000	1250	1410	185	850	0, 250, 500

* GA and GB dimensions of the opening for roof mounting

(b) bold

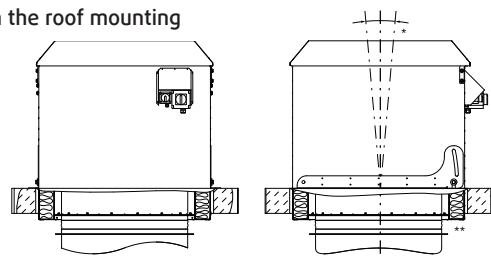
(n) nut

Technical data

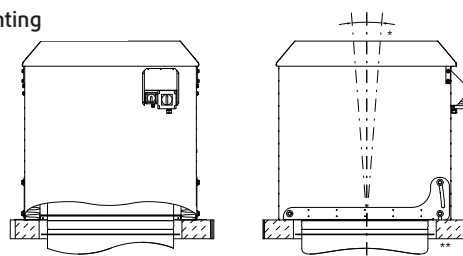
MRH	Max. airflow	Output power	Nominal current	Nominal RPM	Starting curr. DOL	Starting curr. Y-D star	Power factor	Nominal motor eff.	Weight DVAX	Weight DVAX+MRH
400V / 3~ / 50 Hz	[m ³ /h]	[kW]	[A]	[min ⁻¹]	[A]	[A]			[kg]	[kg]
DVAX 1000D4-S + MRH 1000	52000	7.5	14.7	1450	85	28	0.83	0.887	178	481
DVAX 1000D4-M + MRH 1000	64000	11	21.5	1465	142	47	0.81	0.912	235	538
DVAX 1000D4-L + MRH 1000	73000	15	28.3	1470	192	64	0.83	0.920	256	559
DVAX 1120D6-M + MRH 1120	64000	7.5	15.5	975	116	39	0.78	0.893	271	633
DVAX 1120D6-L + MRH 1120	72000	11	22.1	975	164	55	0.80	0.896	287	649

Example of installation

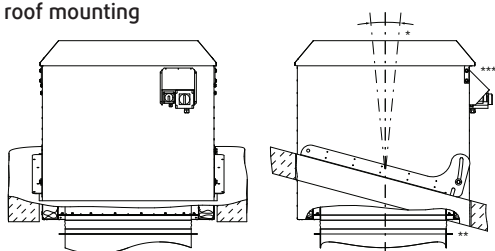
Through the roof mounting



Flat mounting



Pitched roof mounting



Special applications



AXC-G

Two-stage fans

AXC...-G
 AXC...(B) -G
 AXC...(F) -G

- Two Fans mounted in series to reach higher pressure.
- Fan execution according to AXC-, AXC (B)-, AXC (F) -standard.

Axial fan in sound insulated box

AXC-Box

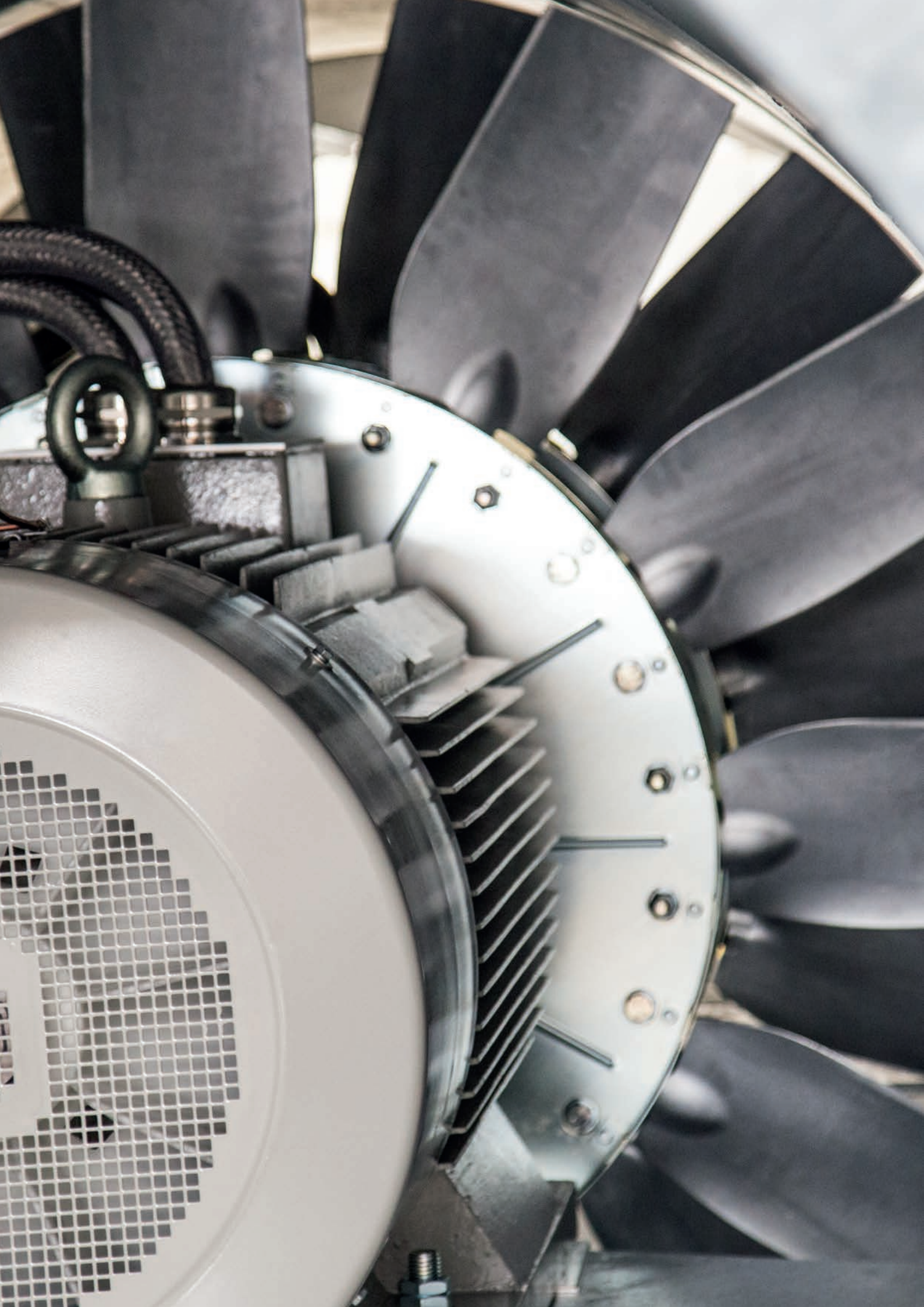
- The complete fan unit is mounted in a vibration insulated box, made of removable, double skin galvanised steel panels with 20 mm, non-combustible mineral wool insulation. Panels on duct connection sides are single skin without insulation
- Box frame, including corners, completely made of aluminium. Fan access possible via maintenance door (selectable access side).
- Standard execution made for horizontal installation, execution for vertical installation on request
- Weather roof for outdoor installation available
- Sound attenuation values for surrounding, see table



Insertion loss DIN EN 1886	Hz	125	250	500	1000	2000	4000	8000
Wall thickness 20 mm	dB	12	14	18	27	22	25	33
Paneele 50 mm	dB	27	34	43	38	34	38	40

Ordering code

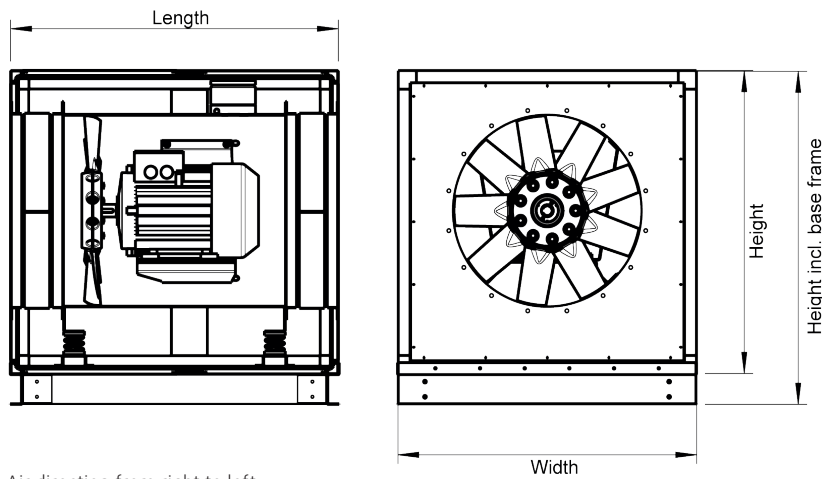
... - G	Two fans mounted in series
... - Box	Axial fan with insulated box



Overview Dimensions AXC-Box

Size	Motor size	Length	Width	Height	Size incl. base frame	Diameter	Gross weight min.	Gross weight max.
AXC 315 (l=375)*	71-90	670	670	670	-	315	70	80
AXC 355 (l=375)*	71-90	670	670	670	-	355	75	85
AXC 400 (l=450)*	71-100	752	670	670	-	400	80	100
AXC 450 (l=500)*	71-112	800	800	800	-	450	100	130
AXC 500 (l=540)*	71-132	858	800	800	-	500	120	160
AXC 500 (l=500)*	80-112	800	1000	1000	1100	560	125	255
AXC 560 (l=750)*	132-160	1100	1000	1000	1100	560	130	260
AXC 630 (l=500)*	80-112	800	1000	1000	1100	630	130	265
AXC 630 (l=750)*	132-180	1100	1000	1000	1100	630	135	270
AXC 710 (l=500)*	80-112	800	1270	1270	1370	710	190	390
AXC 710 (l=700)*	132-160	1000	1270	1270	1370	710	195	395
AXC 710 (l=800)*	160-180	1100	1270	1270	1370	710	200	400
AXC 800 (l=500)*	90-112	800	1270	1270	1370	800	220	440
AXC 800 (l=700)*	132-160	1000	1270	1270	1370	800	225	445
AXC 900 (l=640)*	100-132	1000	1270	1270	1370	900	230	450
AXC 900 (l=850)*	160-200	1170	1270	1270	1370	900	235	455
AXC 1000 (l=640)*	100-132	1000	1340	1600	1700	1000	260	480
AXC 1000 (l=850)*	160-200	1170	1340	1600	1700	1000	265	485

* l = Fan length depending on motor frame size

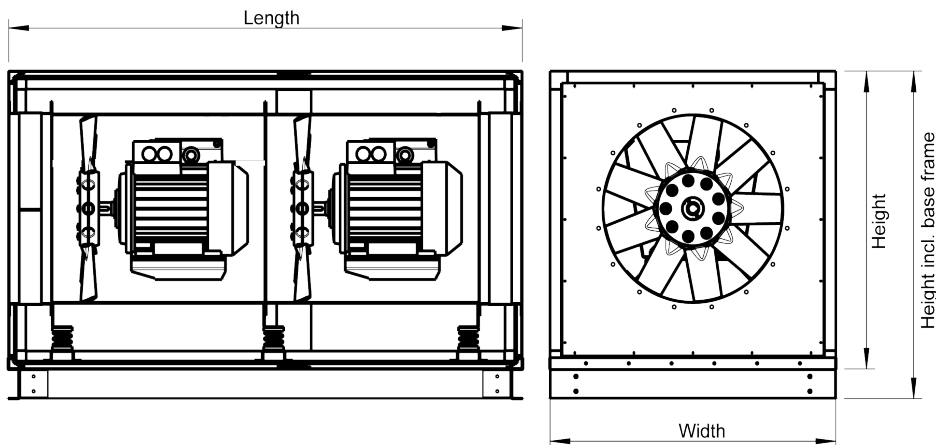


Air direction from right to left

Overview Dimensions AXC-G-Box

Size	Motor size	Length	Width	Height	Size incl. base frame	Diameter	Gross weight min.	Gross weight max.
AXC-G 315 (l=750)*	71-90	1052	670	670	-	315	140	160
AXC-G 355 (l=750)*	71-90	1052	670	670	-	355	150	170
AXC-G 400 (l=900)*	71-100	1198	670	670	-	400	160	200
AXC-G 450 (l=1000)*	71-112	1300	800	800	-	450	200	260
AXC-G 500 (l=1080)*	71-132	1400	800	800	900	500	240	320
AXC-G 560 (l=1000)*	80-112	1300	1000	1000	1100	560	250	510
AXC-G 560 (l=1500)*	132-180	1800	1000	1000	1100	560	265	535
AXC-G 630 (l=1000)*	80-112	1300	1000	1000	1100	630	260	530
AXC-G 630 (l=1500)*	132-180	1800	1000	1000	1100	630	265	535
AXC-G 710 (l=1000)*	80-112	1300	1270	1270	1370	710	380	780
AXC-G 710 (l=1400)*	132-160	1700	1270	1270	1370	710	385	785
AXC-G 710 (l=1600)*	160-180	1900	1270	1270	1370	710	390	790
AXC-G 800 (l=1000)*	90-112	1300	1270	1270	1370	800	440	780
AXC-G 800 (l=1400)*	132-160	1698	1270	1270	1370	800	445	785
AXC-G 900 (l=1280)*	100-132	1600	1270	1270	1370	900	460	900
AXC-G 900 (l=1700)*	160-200	2016	1270	1270	1370	900	465	905
AXC-G 1000 (l=1280)*	100-132	1600	1340	1600	1700	1000	520	960
AXC-G 1000 (l=1700)*	160-200	2016	1340	1600	1700	1000	525	965

* l = Fan length depending on motor frame size



Air direction from right to left

Diffusers for axial fans



- Optimal use of energy input
- Fit for future: Active reduction of CO₂ emissions
- Up to 55% less operating costs depending on installation type



What are diffusers?

Diffusers are components which symmetrically enlarge the fan outlet diameter. Used in the right way diffusers reduce the required motor power of the ventilation system, as they regain constructively caused energy losses. By doing so the used energy can be utilised in an optimal way and the operating costs of the system are significantly lowered.

Functional principle

The total pressure of a ventilation system is divided into two parts and defines the required motor power of a fan: The static pressure, defined by the duct system and built-in components, and the dynamic pressure, defined by the air velocity in the system. Diffusers reduce the air velocity and, therefore, the dynamic pressure.

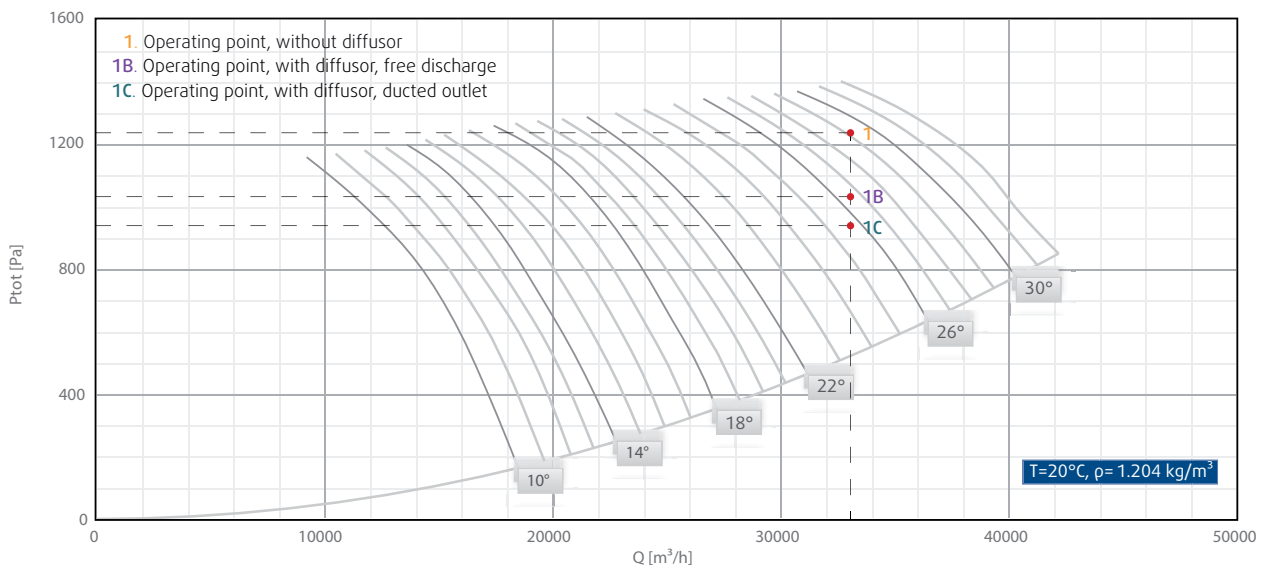
Example of a free discharge fan

The velocity energy (kinetic energy) of a free discharge fan is considered as a loss. The outlet speed directly defines the extent of the energy loss. A diffuser converts part of this energy loss into usable energy (= static pressure). The pressure in the system can be lowered by this "pressure regain". This is done by reducing the original impeller pitch angle of the fan defined without diffuser.

Thus a diffuser reduces the motor power, which in turn can significantly reduce the running costs of the system.

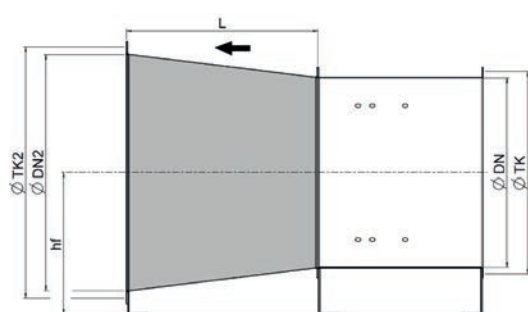
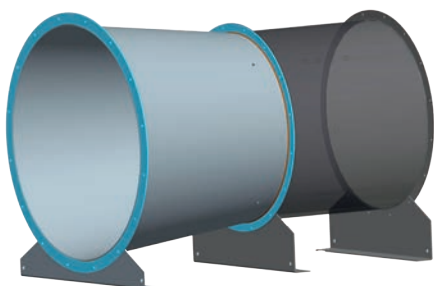
Example

AXC 630-9/x°-2

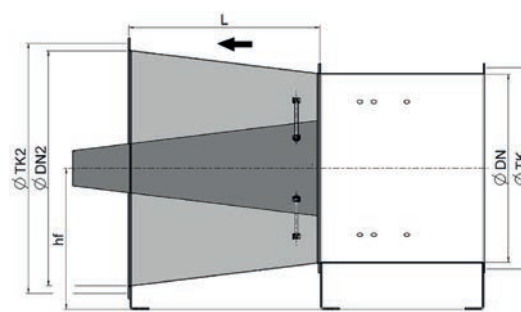
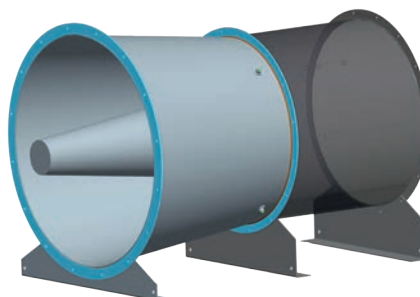


Dimensions

Diffuser A



Diffuser B



DN	Inlet		L	hf	Inlet		Outlet		Weights Diffusors* (kg)	
	$\varnothing DN$	$\varnothing DN2$			$\varnothing TK$	$z \times \varnothing d$	$\varnothing TK2$	$z_2 \times \varnothing d_2$	A	B
560	560	710	611	425	620	12 x $\varnothing 12$	770	16 x $\varnothing 12$	36	39
630	630	800	692	475	690	12 x $\varnothing 12$	860	16 x $\varnothing 12$	44	49
710	710	900	774	530	770	16 x $\varnothing 12$	970	16 x $\varnothing 15$	56	62
800	800	1000	814	600	860	16 x $\varnothing 12$	1.070	16 x $\varnothing 15$	82	99
900	900	1120	896	670	970	16 x $\varnothing 15$	1.190	20 x $\varnothing 15$	110	127
1000	1000	1250	1018	750	1.070	16 x $\varnothing 15$	1.320	20 x $\varnothing 15$	133	150
1120	1120	1400	1140	850	1.190	20 x $\varnothing 15$	1.470	20 x $\varnothing 15$	173	190
1250	1250	1600	1425	900	1.320	20 x $\varnothing 15$	1.680	24 x $\varnothing 19$	246	280
1400	1400	1800	1629	1060	1.470	20 x $\varnothing 15$	1.880	24 x $\varnothing 19$	335	370
1600	1600	2000	1629	1120	1.680	24 x $\varnothing 19$	2.080	24 x $\varnothing 19$	353	403

Dimensions in mm.

*: Diffusor incl. MFA(E) + MFA(A)

Recommendations

Diffusers are recommended in case the fan selection gives the following or higher values:

Dyn. pressure portion at the operating point	$\Delta Pd > 150$ [Pa]	
Medium flow velocity	$c > 16.5$ [m/s]	
Daily operating time	3 h or more	
Type of installation	Free exhaust (A + B, DIN 24163 part 1)	Saving of operation costs up to 55%
	Ducted inlet or ducted outlet (C + D, DIN 24163 part 1)	Saving of operation costs up to 35%

Vibration monitoring for fans

For machine vibration monitoring

Vibration monitoring concept

Continuous vibration control according to ISO 10816-3, 14694, 14695, 13350

With permanent vibration monitoring changes in operating conditions of fans can be located early and corrected when necessary. At an early stage possible machine damages can be avoided and necessary maintenance and repair work can be planned economically.

Systemair vibration monitoring

Code		Description											
Version	Type	Motor size	Position 1: on motor	Position 2: on fan casing	Position 3: position 1+2	Position 4: on bearing shields	Number of sensors	Sensor type	Analysis signal 4-20 [mA]	Limit value setting	1 Digital switch signal ³⁾	Display LED green: on LED yellow: switching status ³⁾	According to DIN ISO 10816-3 / 14694
A	1	160 - 250	X				1	VTV 122	X				yes
	2			X			1	VKV 021	X	X	X	X	¹⁾
	3				X		1	VTV 122	X				yes
								1	VKV 021	X	X	X	X
B	4	ab 250				X	2	VTV 122	X			yes	

¹⁾ System monitoring
²⁾ Complete system monitoring
³⁾ e.g. fan switch off

4 [mA] = 0 [mm/s]
 20 [mA] = 25 [mm/s]

Version A:

VTV122: Signal input by sensor on motor, VKV 021: signal input on fan casing (see type A1-3) (possible exception A2 of Jet-fan → VTV 122 to ISO 13350, on request)

Version B:

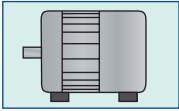
VTV 122 : Signal input by sensors on motor bearing shield (Drive End and Non Drive End) (see type B4)

Vibration causes

Electric motor

Misalignment, electrical motor defect, unbalanced rotor, bearing defective, lubrication problems

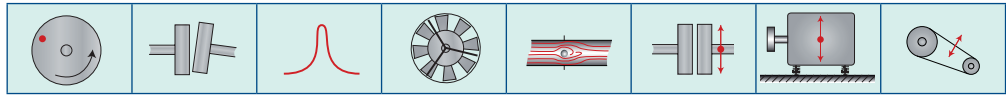
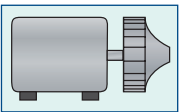
Electric motor



Fans

Unbalance (wear and tear, pollution) misalignment, blade passing frequency, turbulent flow, electric motor, belt drive, natural frequency of belts

Fans



Vibration velocity limits

Sensor VTV 122 –

signal without critical value setting

Sensor VKV 021 –

signal with critical value setting

switch point RMS 0 – 25 [mm/s]

switch point delay time 1 – 60 [s]

switch out put: opening contact when exceeding critical limit

There is also the possibility to transfer a signal over a screened line to the DDC-building management system (BMS). Thereby limit settings can be set. (DDC-Direct Digital Control)

e.g. ISO 10816-3 Vibration velocity limits

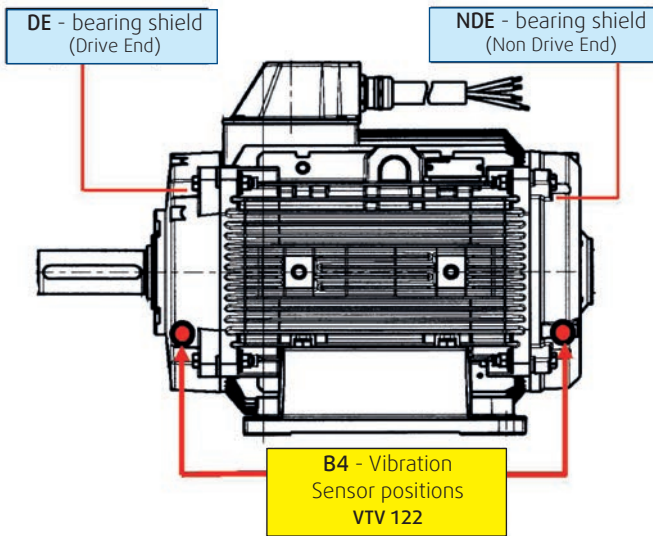
								v r.m.s. in [mm/s]	v r.m.s. in [in/s]	Vibration velocity (2-1000 Hz $n > 600$ [1/min] (2-1000 Hz $n > 120$ [1/min]))
								11	0,433	
								7,1	0,280	
								4,5	0,177	
								3,5	0,138	
								2,8	0,110	
								2,3	0,091	
								1,4	0,055	
								0,71	0,028	
rigid	soft	rigid	soft	rigid	soft	rigid	soft	Base		
pumps > 15[kW] radial, axial, diagonal				medium sized machines 15 [kW] < P ≤ 300 [kW]		large machines 300 [kW] < P < 50MW		Machine type		
direct drive		counter shaft / belt drive		motors 160 mm ≤ H < 315 mm		motors 315 mm ≤ H				
group 4		group 3		group 2		group 1		Group		

 start up

 unlimited long-term operation

 short-term operation

 vibrations cause damages



Sensor positions on bearing shields (B4: VTV 122)



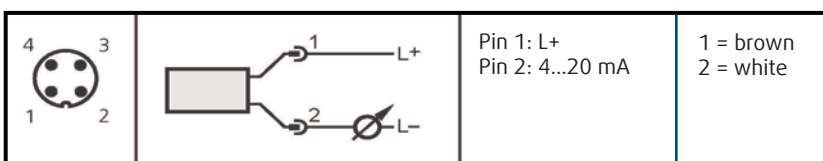
Sensor position on motor center (A1: VTV 122)

Sensor VTV 122 – technical data, wiring

Application	Vibration transmitter Vrms to ISO 10816
Electrical design	DC
Output	4...20 mA analogue
Operating voltage [V]	9.6...32 DC
Load for analogue output [Ω]	max. ($U_b = 9.6V$) x 50; 720 at $U_b = 24 V$
Frequency range [Hz]	10...1000
Analogue output	4...20 mA
Accuracy [%]	$< \pm 3$
Repeatability	$< 0.5 \%$
Measuring range	4 mA = 0 mm/s...20 mA = 25 mm/s
Ambient temperature [°C]	-30...+105
Protection	IP 69
EMC	EN 61000-4-2 ESD: 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-6 HF conducted: 10 V
Housing materials	V4A (1.4404)
Connection	M8
Weight [kg]	0.125



Sensor VTV 122



Sensor VKV 021 – technical Data , wiring

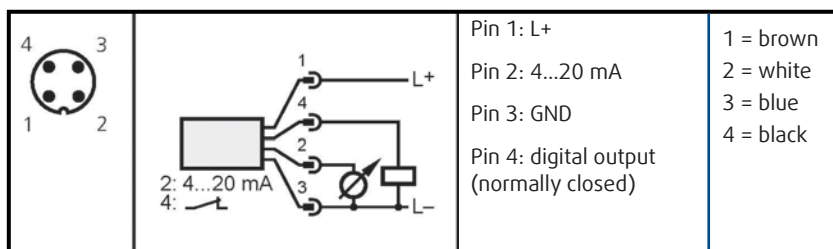
Application	Vibration monitor Vrms to ISO 10816	
Output	1 x normally / 1 x analogue 4...20 mA	
Operating voltage [V]	18...32 DC	
Current rating [mA]	500	
Short-circuit protection	pulsed	
Reverse polarity protection	yes	
Overload protection	yes	
Voltage drop [V]	< 2	
Current consumption [mA]	< 50	
Load for analogue output [Ω]	< 500	
Accuracy / deviations (in % of the span)		
Switch point accuracy	< \pm 4	
Repeatability **)	< 1	
Analogue output	4...20 mA	
Accuracy [%]	< \pm 5	
Repeatability	< 0,5 %	
Adjustment range	Switch point RMS 0...25 mm/s; Switch point delay time 1...60 s	
Ambient temperature [°C]	-25...80	
Protection	IP 67	
EMC	EN 61000-4-2 ESD: 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-6 HF conducted: 10 V	
Housing materials	PBT (Pocan); PC (Makrolon); FPM (Viton); V4A (1.4404)	
Display	Operation: LED green Switching status: LED yellow	
Connection	M8	
Weight [kg]	0,114	



Sensor position on fan casing. (A2 : VKV 021)



Sensor VKV 021



Terminal box

Sensor signals are readable from the relevant serial terminal in the terminal box by multi functional measuring devices (wiring diagram in terminal box).



Terminal Box - Vibration control

Vibration velocity measuring

The conversion of the linear current signal is done according to the following formula:

$$\text{Vibration velocity [mm/s]} = (\text{mA} - 4) / 0,6399$$

$$[\text{in/s}] = ((\text{mA} - 4) / 0,6399) / 25,4$$

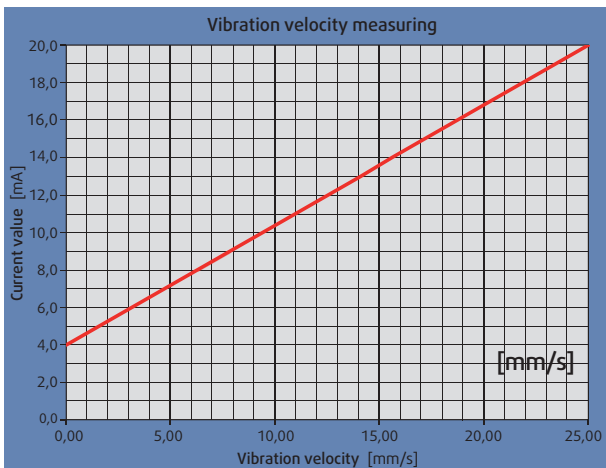


Table: Conversion of [mA] → mm/s]

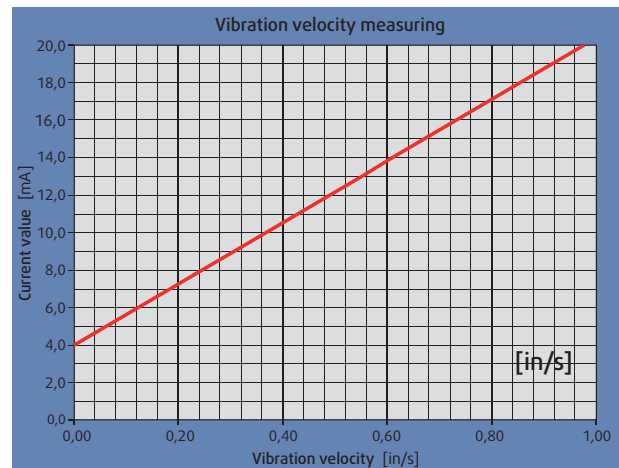


Table: Conversion of [mA] → [in/s]

Available versions

Vibration monitoring consisting of

Vibration monitoring A1

Article no.: 34261

- 1 pcs. Vibration controller/ sensor VTV 122
10 Hz – 1 kHz , Measuring range 25 [mm/s]
- 1 pcs. Adapter/ turned part
- 1 pcs. Sensor cable, cable plug 4pole
Screened cable grey, 6 mm
- 1 pcs. Terminal box IP 65
L 125 x W 80 x D 57 mm in die cast aluminum
Coated RAL 7035 with cable gland 2x M12x1,5 / 1x M16x1,5

Vibration monitoring A2

Article no.: 34262

- 1 pcs. Vibration controller / sensor VKV 021 incl. protection cap
10 Hz – 1 kHz , measuring range 25 [mm/s]
2 adjustable switching points and opening contact
- 1 pcs. Sensor cable, cable plug 4pole
Screened cable grey, 6 mm
- 1 pcs. Terminal box IP 65
L 125 x W 80 x D 57 mm in die cast aluminum
Coated RAL 7035 with cable gland 2x M12x1,5 / 1x M16x1,5

Vibration monitoring A3⁽¹⁾

Article no.: 34263

- 1 pcs. vibration controller / sensor VTV 122
10 Hz – 1 kHz , measuring range 25 [mm/s]
- 1 pcs. Adapter/ turned part
- 1 pcs. Vibration controller / sensor VKV 021 incl. protection cap
10 Hz – 1 kHz , measuring range 25 mm/s
2 adjustable switching points and opening contact
- 2 pcs. Sensor cable, cable plug 4pole
Screened cable grey, 6 mm
- 1 pcs. Terminal box IP 65
L 125 x W 80 x D 57 mm in die cast aluminum
Coated RAL 7035 with cable gland 2x M12x1,5 / 1x M16x1,5

Vibration monitoring B4⁽¹⁾

Article no.: 34264

- 2 pcs. Vibration controller / sensor VTV 122
10 Hz – 1 kHz , measuring range 25 [mm/s]
- 2 pcs. Sensor cable, cable plug 4pole
Screened cable grey, 6 mm
- 1 pcs. Terminal box IP 65
L125 x W 80 x D 57 mm in die cast aluminum
Coated RAL 7035 with cable gland 2x M12x1,5 / 1x M16x1,5

More versions on request.

⁽¹⁾ Only possible when already mentioned with fan inquiry.

Systemair around the globe

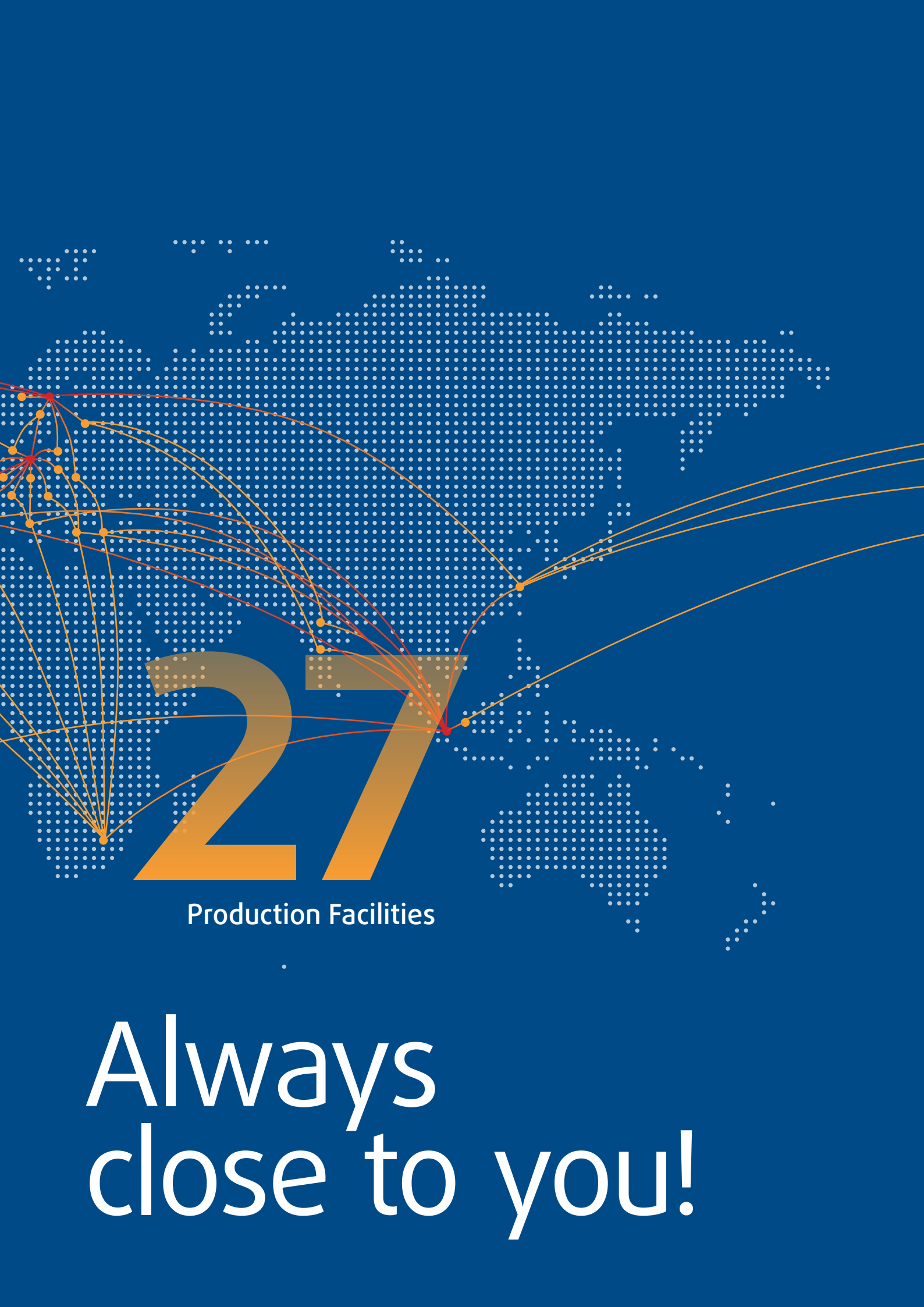


3

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