

8300100519
VUA0710BTPZ

EC axial panel fan - AxiBlade

sickle-shaped blades (S series)
Fan housing with guard grille

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Nominal data

Item	8300100519	
Motor	E15031-85	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min ⁻¹	1680
Power consumption	W	3800
Current draw	A	5.8
Max. back pressure	Pa	420
Max. back pressure	in. wg	1.69
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · oe = Customer equipment
Subject to change

Data according to Commission Regulation (EU) 327/2011 (prEN 17166)

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	49.7	37.2	09 Power consumption P_{ed}	kW	3.69
02 Measurement category		A		09 Air flow q_v	m ³ /h	17120
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	370
04 Efficiency grade N		52.5	40	10 Speed (rpm) n	min ⁻¹	1680
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

* Specific ratio = $1 + p_g / 100\,000\text{ Pa}$

LU-205877

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.
The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

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Technical description

Weight	39 kg
Size	710 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Impeller material	PP plastic
Fan housing material	Sheet steel, galvanized and coated with black plastic (RAL 9005)
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
Blade pitch	0°
Airflow direction	A
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Power Factor Correction (PFC)	Passive (through low-capacitance DC link)
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Electronic motor protection

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Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class assignments. The final protection class is determined by the intended installation.
Conformity with standards	EN 61800-5-1; CE
Approval	EAC; UL 1004-7 + 60730-1; CSA C22.2 No. 77 + CAN/CSA-E60730-1

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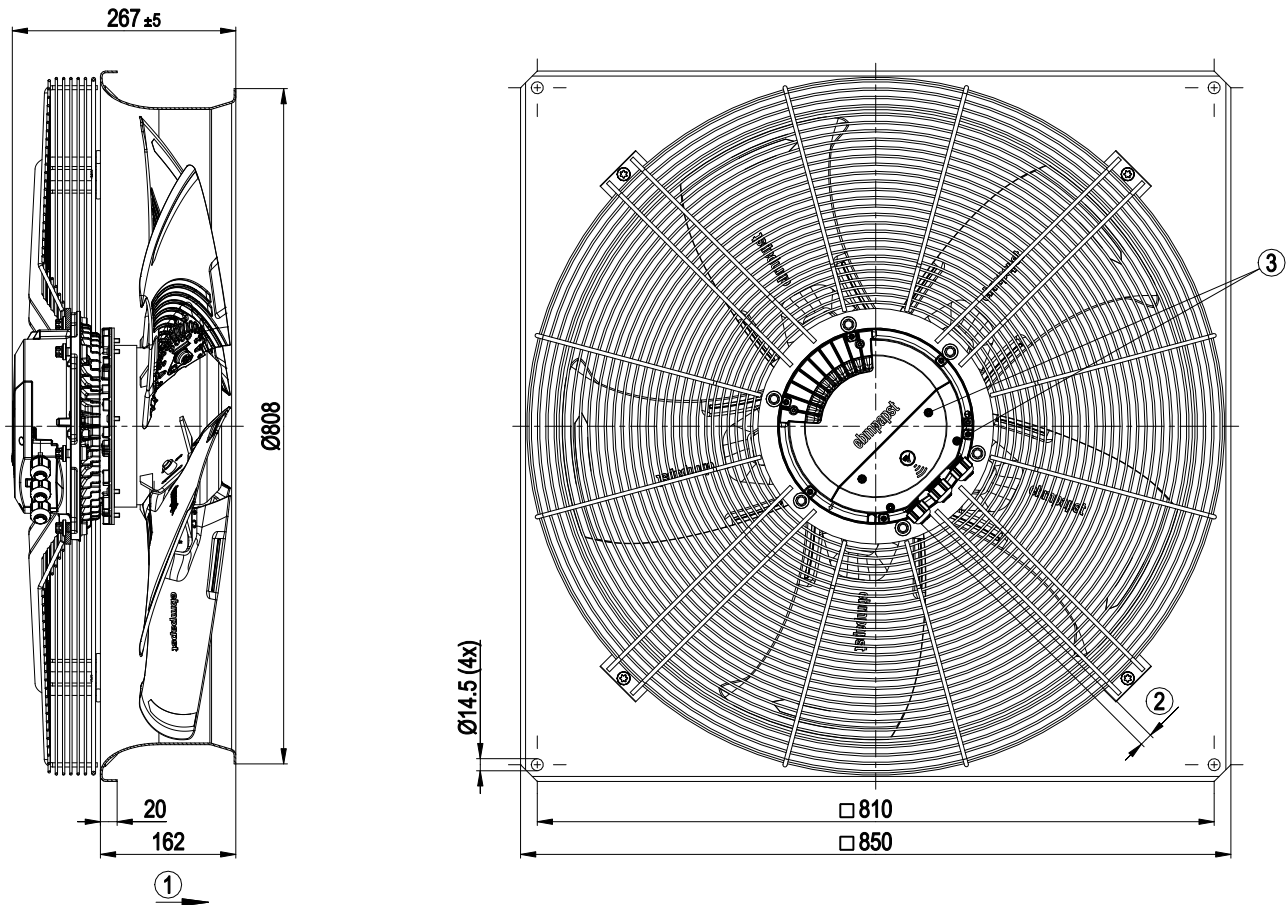
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Product drawing



1	Direction of air flow "A"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm (The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Tightening torque 1.5 ± 0.2 Nm

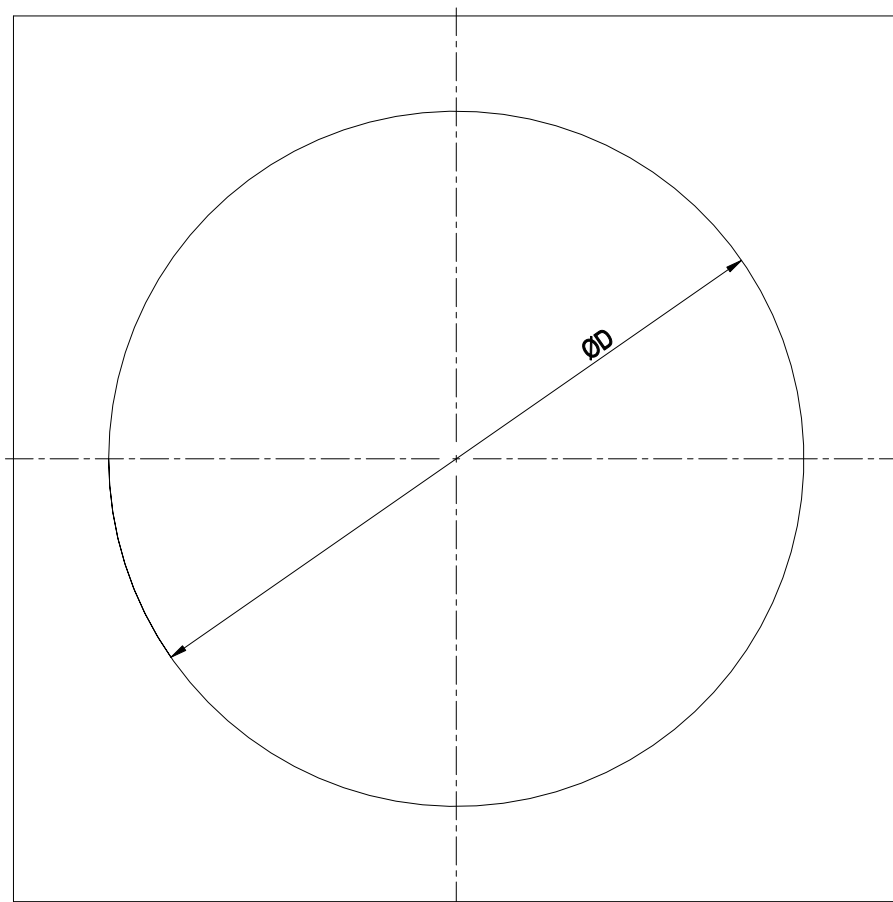
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Mounting dimensions



Diameter of the necessary recess for mounting the fan housing in the end device

BG630: D = $\varnothing$ 785 mm

BG710: D = $\varnothing$ 830 mm

BG800: D = $\varnothing$ 950 mm

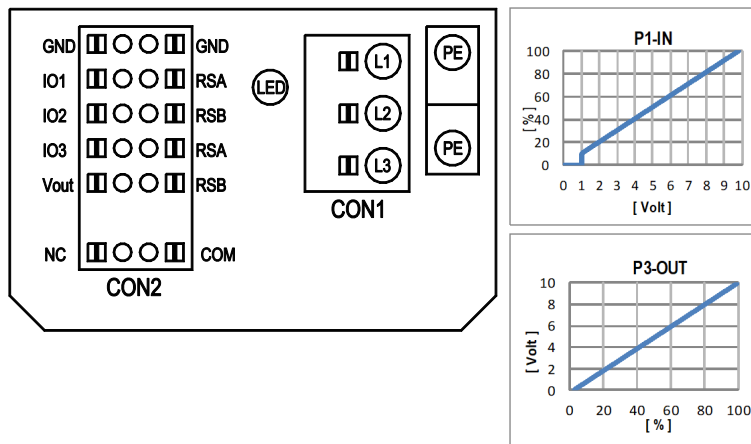
BG910: D = $\varnothing$ 1050 mm

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Connection diagram



No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see "Optional interface functions" table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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Terminal/plug assignment

○ configurable option																			
For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.3																			
CON2	configurable IO mode	electrical specification	configurable IO functions: normal / inverse	D158 [0]	○	switch: fan enable / disable	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [1]	signal: actual speed	D130 [2]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D130 [4]	pulse output for auto-addressing		
				D158 [2]	○	switch: control function: heating (pos.) / cooling (neg.)		D130 [0]	signal: fan modulation level %	D130 [1]	signal: actual speed	D130 [2]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D130 [4]	pulse output for auto-addressing		
	IO1	MODBUS Register for IO mode configuration	D158 [2]	○	switch: parameter set: #1 / #2		D104 [...]	source: sensor value	D147 [...]		D16A [...]	switch: set value source	D16C [...]						
			D158 [5]				D104 [...]				D16C [...]								
			D158 [6]				D104 [...]				D16C [...]								
			D159 [0]				D104 [...]				D16C [...]								
	IO2	MODBUS Register for IO mode configuration	D159 [2]	○	switch: control function: heating (pos.) / cooling (neg.)		D104 [...]	source: sensor value	D147 [...]		D16A [...]	switch: set value source	D16C [...]						
			D159 [3]				D104 [...]				D16C [...]								
			D15A [0]				D104 [...]				D16C [...]								
			D15A [1]				D104 [...]				D16C [...]								
	IO3	MODBUS Register for IO mode configuration	D15A [7]	○	switch: parameter set: #1 / #2		D104 [...]	source: sensor value	D147 [...]		D16A [...]	switch: set value source	D16C [...]						
			D15A [8]				D104 [...]				D16C [...]								
D15A [4]						D104 [...]				D16C [...]									
D15A [5]						D104 [...]				D16C [...]									
RSA RSB	MODBUS RTU, specification V6.3, SELV	D15A [6]				D104 [...]	source: sensor value	D147 [...]		D16A [...]	switch: set value source	D16C [...]							
		D16E [...]				D104 [...]	source: sensor value	D147 [...]		D16A [...]	switch: set value source	D16C [...]							
Vout	voltage output	D16E [...]				D104 [...]	source: sensor value	D147 [...]		D16A [...]	switch: set value source	D16C [...]							
		D16E [...]				D104 [...]	source: sensor value	D147 [...]		D16A [...]	switch: set value source	D16C [...]							

◦ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.3

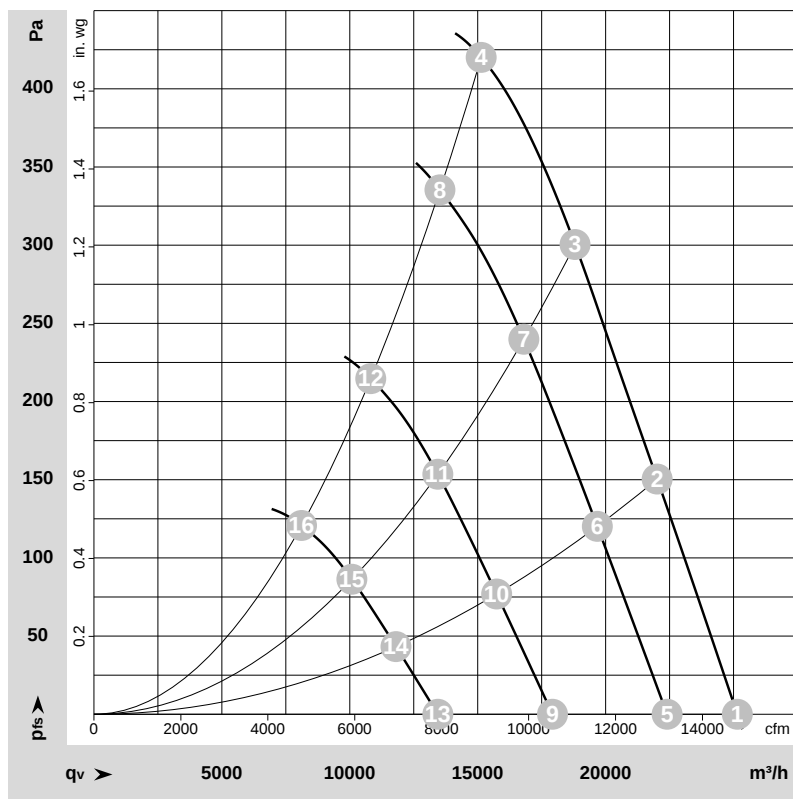
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Curves: Air performance 50 Hz



$$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$$

Measurement: LU-205877-1
Date: 2020-04-01

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

Measured values

	Wired	U	f	n	P _e	I	LpA _{in}	LwA _{in}	LwA _{out}	LwA	q _v	P _{fs}	q _v	P _{fs}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	dB	m³/h	Pa	cfm	in. wg
1	3~	400	50	1680	2212	3.44	81	90	91	93	25150	0	14800	0.00
2	3~	400	50	1680	2810	4.32	80	88	89	92	22015	150	12955	0.60
3	3~	400	50	1680	3413	5.22	80	88	89	92	18805	300	11070	1.20
4	3~	400	50	1680	3800	5.80	85	93	94	96	15135	420	8910	1.69
5	3~	400	50	1500	1564	2.43	78	87	88	90	22405	0	13185	0.00
6	3~	400	50	1500	2006	3.09	77	85	87	89	19675	120	11580	0.48
7	3~	400	50	1500	2434	3.72	78	85	86	89	16805	241	9890	0.97
8	3~	400	50	1500	2789	4.25	83	90	91	93	13525	336	7960	1.35
9	3~	400	50	1200	801	1.24	73	81	82	85	17925	0	10550	0.00
10	3~	400	50	1200	1027	1.58	71	80	81	83	15740	77	9265	0.31
11	3~	400	50	1200	1246	1.91	72	80	81	83	13440	154	7910	0.62
12	3~	400	50	1200	1428	2.18	77	84	85	88	10820	215	6370	0.86
13	3~	400	50	900	338	0.53	65	74	75	78	13440	0	7910	0.00
14	3~	400	50	900	433	0.67	64	73	74	76	11805	43	6950	0.17
15	3~	400	50	900	526	0.80	65	72	74	76	10080	87	5935	0.35
16	3~	400	50	900	602	0.92	70	77	78	80	8115	121	4775	0.49

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
LwA_{out} = Sound power level outlet side · q_v = Air flow · P_{fs} = Pressure increase