

8300100491

VWA0800BTTPS

EC axial panel fan - AxiBlade

sickle-shaped blades (S series)

Fan housing with guide vanes

8300100491 ebmpapst Datasheet FansCo

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Nominal data

Item	8300100491	
Motor	E15037-85	
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	1200
Power consumption	W	3500
Current draw	A	5.1
Max. back pressure	Pa	340
Max. back pressure	in. wg	1.36
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

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

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

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	53.5	37.1	09 Power consumption P_{ed}	kW	3.47
02 Measurement category		A		09 Air flow q_v	m ³ /h	19205
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	332
04 Efficiency grade N		56.4	40	10 Speed (rpm) n	min ⁻¹	1200
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-222785

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	50,3
Size	800 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	PP plastic
Fan housing material	Sheet steel, galvanized and coated with black plastic (RAL 9005)
Material guide vanes	PP plastic
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
Blade pitch	0°
Airflow direction	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
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; (sealed)
Technical features	<ul style="list-style-type: none"> - Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.4 - Motor current limitation - PFC, active - 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 - Vibration sensor
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Protection class assignment	<p>I; If a protective earth is connected.</p> <p>The built-in component has several local protection class assignments.</p> <p>The final protection class is determined by the intended installation.</p>
Conformity with standards	EN 61800-5-1; UKCA; CE
Approval	UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1

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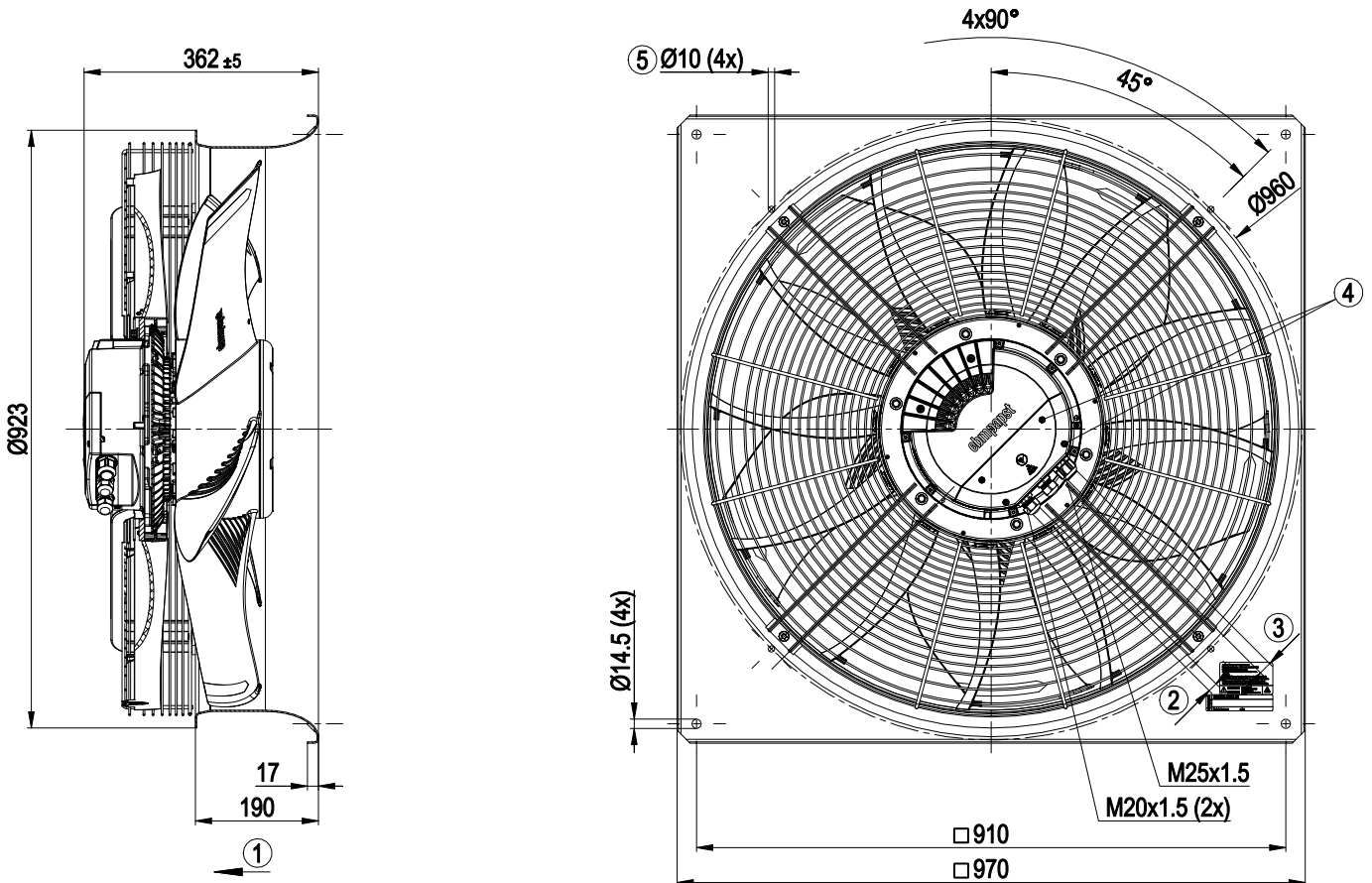
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Product drawing



1	Airflow direction "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 5 mm, max. 14 mm, tightening torque 6 ± 0.9 Nm
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
4	Tightening torque 1.5 ± 0.2 Nm
5	Mounting holes for FlowGrid

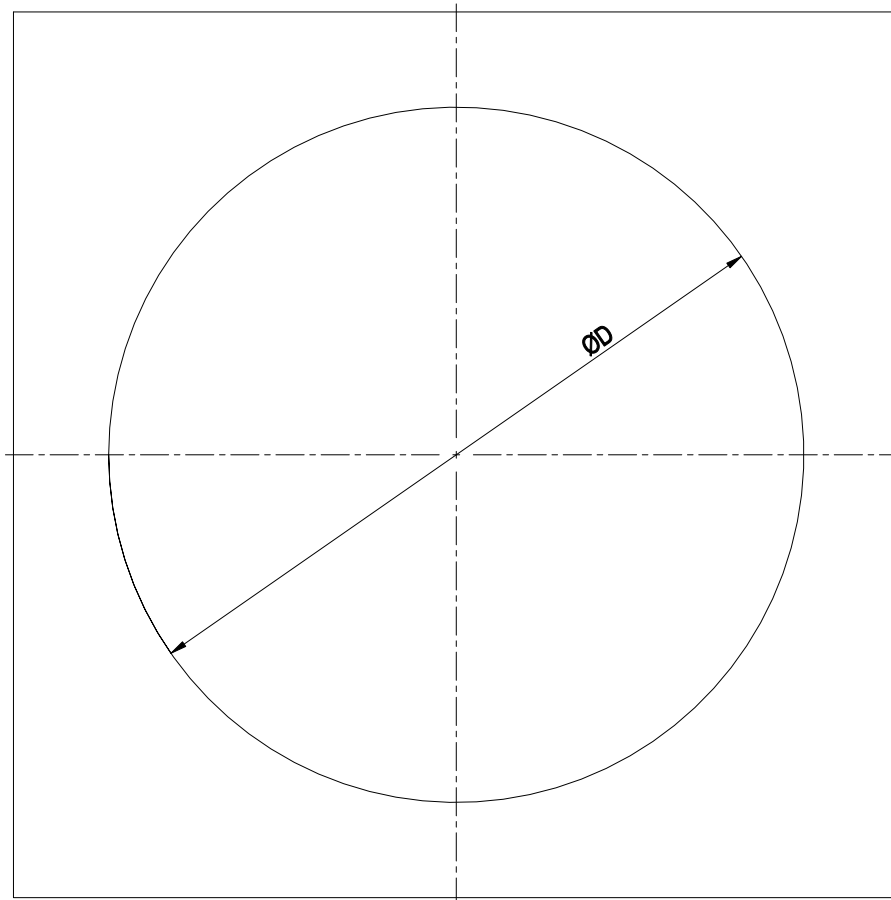
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Mounting dimensions



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

BG630: D = Ø785 mm

BG710: D = Ø830 mm

BG800: D = Ø950 mm

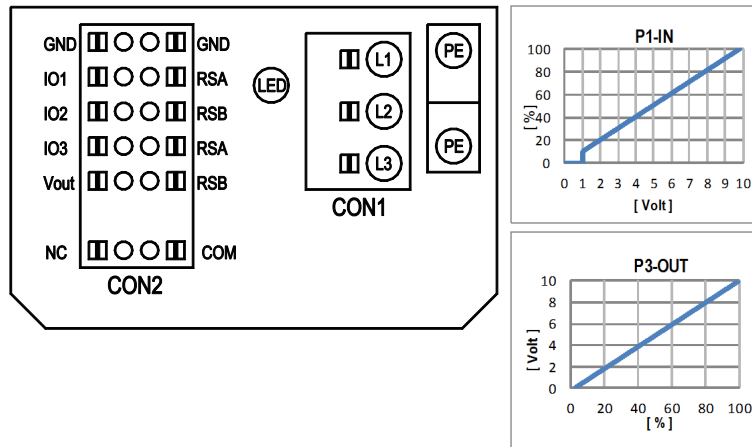
BG910: D = Ø1050 mm

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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: Actual speed Characteristic curve parametrizable (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

CON2	configurable IO mode	electrical specification	configurable IO functions: normal / inverse	MODBUS Register for IO mode configuration	INPUT	OUTPUT
IO1	○ Din1 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		D158 [0]	switch: set value source	signal: tach out (selected directly via IO mode)
	○ Ain1 0-10V/PWM: analog input	RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV		D158 [2]	switch: fan enable / disable	signal: fan modulation level % (selected directly via IO mode)
	○ Tach out (open collector output)	U _{max} = 50VDC, I _{max} = 20mA, SELV		D158 [5]	switch: direction of rotation: cw / ccw	signal: actual speed
	○ Diagnostics out (open collector output)	U _{max} = 50VDC, I _{max} = 20mA, SELV		D158 [6]	switch: control function: heating (pos.) / cooling (neg.)	signal: diagnostics out (selected directly via IO mode)
IO2	○ Din2 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		D159 [0]	switch: parameter set: #1 / #2	
	○ Ain2 0-10V/PWM: analog input	RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV		D159 [2]	source: sensor value	
	○ Ain2 4-20mA: analog input	RI = 125R, characteristic curve parameterizable, SELV		D159 [3]	source: set value	
IO3	○ Din3 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		D15A [0]		
	○ Din3 (active low), digital input	active: applied voltage < 1.5VDC, SELV not active: pin open or applied voltage 3.5-50VDC		D15A [1]		
	○ PWMIn3: digital input idle level high	PWM = 40Hz - 10KHz, characteristics parameterizable active: pin open or applied voltage 3.5-50VDC not active: applied voltage < 1.5VDC, SELV		D15A [7]		
	○ PWMIn3: digital input idle level low	40Hz - 10KHz, characteristics parameterizable active: applied voltage 3.5-50VDC not active: pin open or applied voltage < 1.5VDC, SELV		D15A [8]		
RSA RSB	○ Aout3 0-10V: analog output	function parameterizable, max. 5mA max output frequency 300Hz SELV		D15A [4]		
	○ Tacho out (pulses), analog output	0-10V max. 5mA max output frequency 300Hz SELV		D15A [5]		
	○ Diagnostics out (pulses)	0-10V max. 5mA max output frequency 300Hz, SELV		D15A [6]		
RSA RSB	RS485 bus connection,	MODBUS RTU, specification V6.4, SELV				
Vout	voltage output alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage	voltage parameterizable 3.3...24VDC +/- 5%, P _{max} =800mW, short-circuit-proof, supply for external devices, SELV 15...50VDC		D16E [...]		

○ configurable option

For further information and additional functions see EC Control Software: Fan-Set-App. or MODBUS Parameter Specification V6.4

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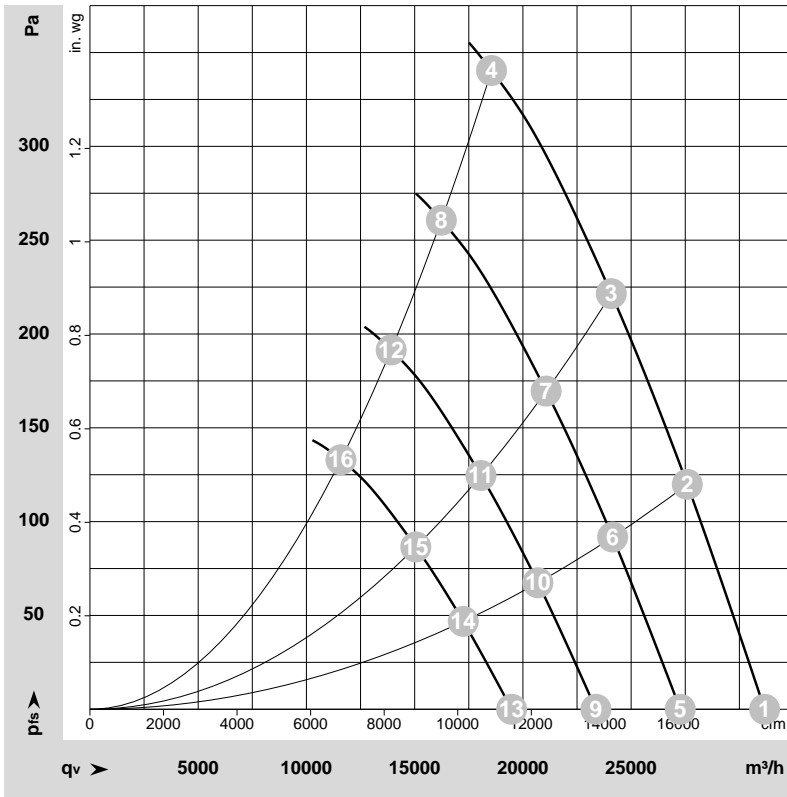
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Curves: Air performance 50 Hz



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

Measurement: LU-222785-1
Date: 2022-08-05
Housing: 15863-2-4037

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	m ³ /h	Pa	cfm	in. wg
1	3~	400	50	1200	2543	3.68	76	84	87	89	31165	0	18345	0.00
2	3~	400	50	1200	2975	4.30	75	83	85	87	27595	120	16240	0.48
3	3~	400	50	1200	3289	4.76	77	85	85	88	24080	220	14175	0.88
4	3~	400	50	1200	3500	5.10	86	93	94	97	18550	340	10920	1.36
5	3~	400	50	1050	1703	2.47	72	81	84	86	27270	0	16050	0.00
6	3~	400	50	1050	1993	2.88	72	80	82	84	24145	92	14210	0.37
7	3~	400	50	1050	2204	3.19	74	82	82	85	21070	170	12405	0.68
8	3~	400	50	1050	2350	3.40	82	90	90	93	16230	261	9555	1.05
9	3~	400	50	900	1073	1.55	69	77	80	82	23375	0	13755	0.00
10	3~	400	50	900	1255	1.81	68	76	78	80	20695	68	12180	0.27
11	3~	400	50	900	1388	2.01	70	78	78	81	18060	125	10630	0.50
12	3~	400	50	900	1480	2.14	79	86	87	89	13915	192	8190	0.77
13	3~	400	50	750	621	0.90	64	72	76	77	19480	0	11465	0.00
14	3~	400	50	750	726	1.05	63	71	73	75	17245	47	10150	0.19
15	3~	400	50	750	803	1.16	66	73	74	76	15050	87	8860	0.35
16	3~	400	50	750	856	1.24	74	82	82	85	11595	133	6825	0.53

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