

8300100613
VWA0800CTTPS

EC axial panel fan - AxiEco

with inlet ring and guard grill

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General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen

Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Item	8300100613	
Motor	E15037-85	

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min ⁻¹	1470
Power consumption	W	3900
Current draw	A	5.6
Max. back pressure	Pa	650
Max. back pressure	in. wg	2.61
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}	%	53.2	37.3	09 Power consumption P_{ed}	kW	3.73
02 Measurement category	A			09 Air flow q_v	m³/h	13690
03 Efficiency category	Static			09 Pressure increase p_{fs}	Pa	500
04 Efficiency grade N	55.9		40	10 Speed (rpm) n	min ⁻¹	1475
05 Variable speed drive	Yes			11 Specific ratio*	1.01	

Data obtained at optimum efficiency level.

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

LU-221583

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

Size	800 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Impeller material	PP plastic, ABS ring plastic
Inlet ring 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
Airflow direction	V
Direction of rotation	Clockwise, 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; (sealed)
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 V6.4 - 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
Power Factor Correction (PFC)	Active
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC circuit feedback	According to EN 61000-3-2/3
EMC interference emission	According to EN 61000-6-4 (industrial environment)
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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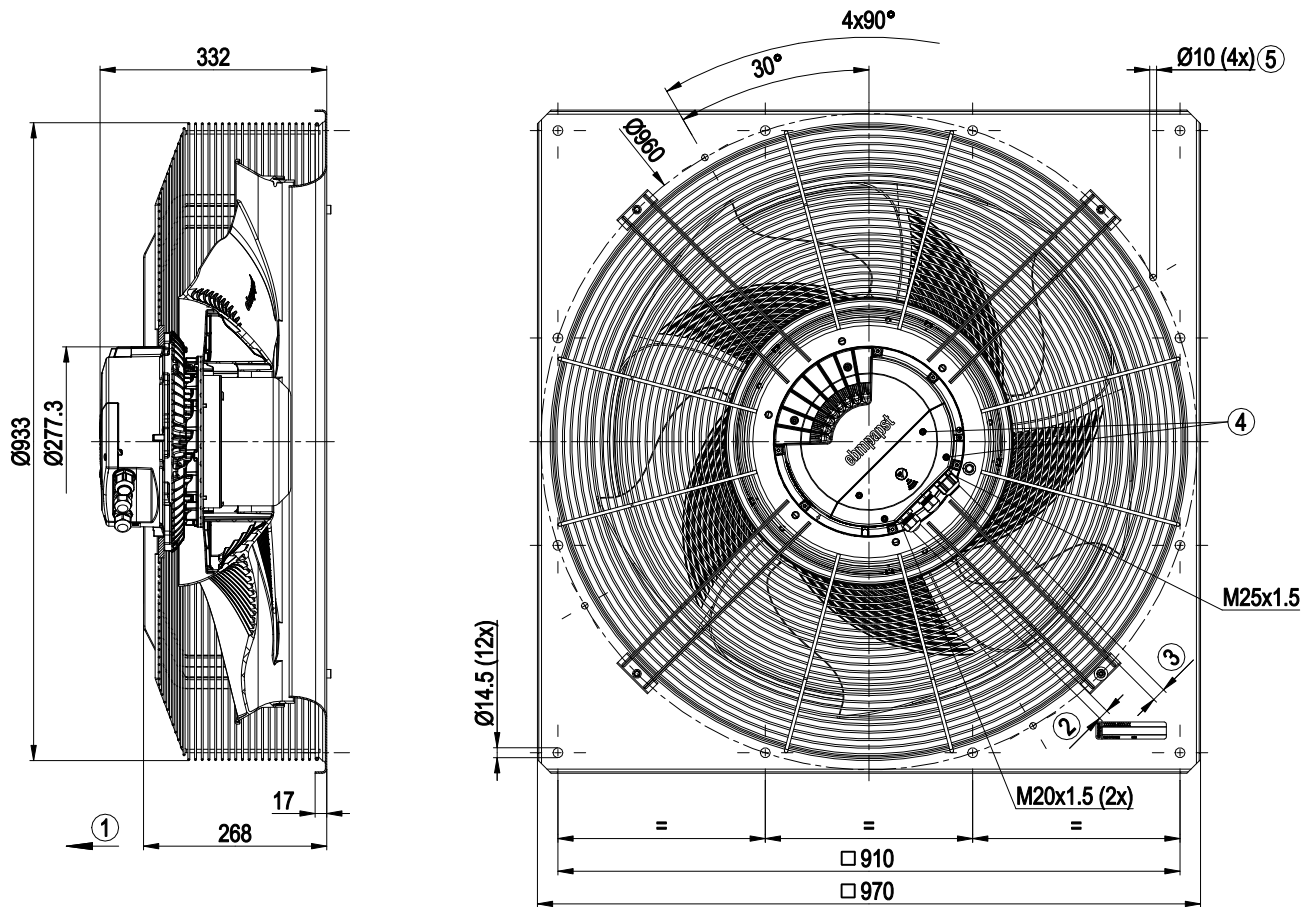
with inlet ring and guard grill

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; UKCA
Approval	EAC; UL 1004-7 + 60730-1; CSA C22.2 No. 77 + CAN/CSA-E60730-1

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Product drawing

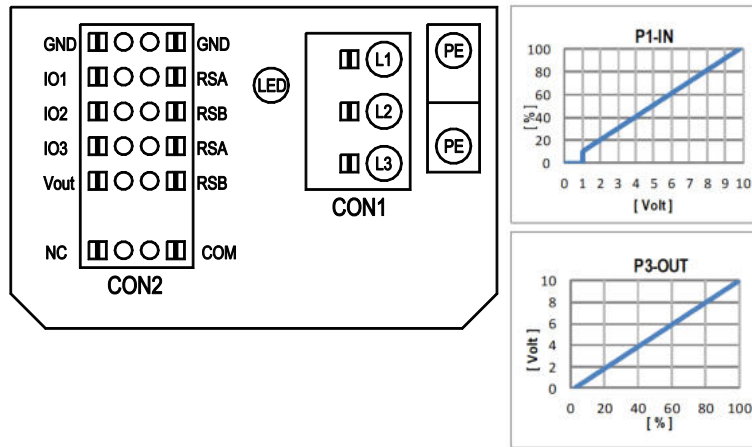


1	Airflow direction "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 5 mm, max. 14 mm, tightening torque 6 ± 0.9 Nm
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
4	Tightening torque 3 ± 0.3 Nm
5	Attachment holes for FlowGrid 80000-2-2957 (not included in scope of delivery)

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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

Terminal/plug assignment

configurable option		For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.4		configurable IO functions: normal / inverse		MODBUS Register for IO mode configuration		electrical specification		configurable IO mode		CON2																	
										digital input																			
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		D16A [...]		OUTPUT		(selected directly via IO mode)		D130 [0]		D130 [1]		D130 [2]		D130 [5]		D00C [1]		D130 [4]			
		Ain1 0-10V/PWM: analog input		Ri = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz SELV		D158 [2]		switch: fan enable / disable		D16C [...]				(selected directly via IO mode)		D130 [9]		signal: fan modulation level %		D130 [11]		signal: system modulation level %		D130 [5]		D00C [1]		D130 [4]	
		Tach out (open collector output)		U _{max} = 50VDC, I _{max} = 20mA SELV		D158 [5]		switch: direction of rotation: cw / ccw		D148 [...]				(selected directly via IO mode)		D130 [10]		signal: actual speed		D130 [11]		signal: remote control output 0-10V		D130 [5]		D00C [1]		D130 [4]	
		Diagnostics out (open collector output)		U _{max} = 50VDC, I _{max} = 20mA SELV		D158 [6]		switch: set value source		D16C [...]				(selected directly via IO mode)		D130 [11]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]	
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: control function: heating (pos.) / cooling (neg.)		D12E [...]		INPUT		(selected directly via IO mode)		D130 [0]		D130 [1]		D130 [2]		D130 [5]		D00C [1]		D130 [4]			
		Ain2 0-10V/PWM: analog input		Ri = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz SELV		D159 [2]		switch: parameter set: #1 / #2		D104 [...]				(selected directly via IO mode)		D130 [9]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]	
		Ain2 4-20mA: analog input		Ri = 125R, characteristic curve parameterizable, SELV		D159 [3]		source: sensor value		D147 [...]				(selected directly via IO mode)		D130 [10]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]	
								source: set value		D101 [...]				(selected directly via IO mode)		D130 [11]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]	
IO3		Din3 (active high): digital input		active: applied voltage 3,5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC		D15A [0]		switch: control function: heating (pos.) / cooling (neg.)		D12E [...]		INPUT		(selected directly via IO mode)		D130 [0]		D130 [1]		D130 [2]		D130 [5]		D00C [1]		D130 [4]			
		Din3 (active low): digital input		active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC		D15A [1]		switch: parameter set: #1 / #2		D104 [...]				(selected directly via IO mode)		D130 [9]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]	
		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]		source: sensor value		D147 [...]				(selected directly via IO mode)		D130 [10]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]	
		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]		source: set value		D101 [...]				(selected directly via IO mode)		D130 [11]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]	
		Aou3 0-10V: analog output		function parameterizable, max. 5mA, max output frequency 300Hz, SELV		D15A [4]		switch: control function: heating (pos.) / cooling (neg.)		D12E [...]				INPUT		(selected directly via IO mode)		D130 [0]		D130 [1]		D130 [2]		D130 [5]		D00C [1]		D130 [4]	
Tacho out (pulses): analog output		0-10V max. 5mA, max output frequency 300Hz, SELV		D15A [5]		switch: parameter set: #1 / #2		D104 [...]		(selected directly via IO mode)		D130 [9]				signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]			
Diagnostics out (pulses)		0-10V max. 5mA, max output frequency 300Hz, SELV		D15A [6]		source: sensor value		D147 [...]		(selected directly via IO mode)		D130 [10]				signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]			
RS485 bus connection,		MODBUS RTU, specification V6.4, SELV				switch: control function: heating (pos.) / cooling (neg.)		D12E [...]		INPUT		(selected directly via IO mode)				D130 [0]		D130 [1]		D130 [2]		D130 [5]		D00C [1]		D130 [4]			
voltage output		voltage parameterizable 3,3..24VDC +/- 5%, P _{max} =800mW, short-circuit-proof, supply for external devices, SELV		D16E [...]		source: set value		D101 [...]				(selected directly via IO mode)				D130 [11]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]	
alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage		15...50VDC				switch: parameter set: #1 / #2		D104 [...]				(selected directly via IO mode)		D130 [9]		signal: tach out		D16A [...]		signal: fan enable / disable		D130 [5]		D00C [1]		D130 [4]			

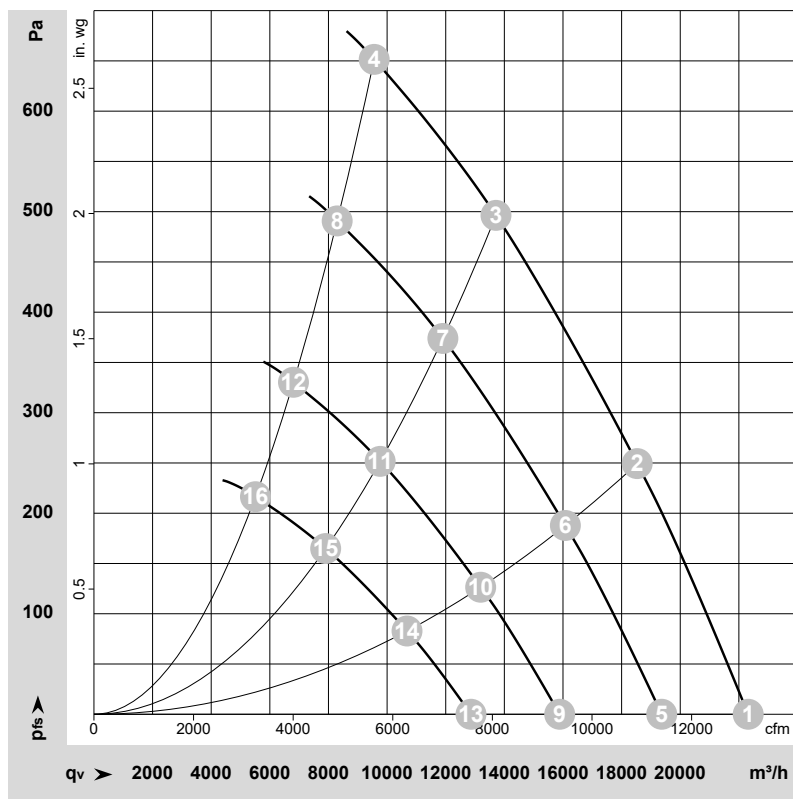
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Curves: Air performance 50 Hz



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	1470	2280	3.29	85	92	93	96	22320	0	13135	0.00
2	3~	400	50	1470	3144	4.54	80	88	89	91	18530	250	10910	1.00
3	3~	400	50	1470	3737	5.39	77	85	88	89	13715	500	8070	2.01
4	3~	400	50	1470	3900	5.60	79	87	92	93	9560	650	5625	2.61
5	3~	400	50	1280	1490	2.15	82	89	90	92	19370	0	11400	0.00
6	3~	400	50	1280	2054	2.96	77	84	85	88	16080	188	9465	0.75
7	3~	400	50	1280	2442	3.52	74	81	84	86	11905	375	7005	1.51
8	3~	400	50	1280	2542	3.67	76	83	89	90	8295	491	4885	1.97
9	3~	400	50	1050	822	1.19	77	84	85	87	15890	0	9350	0.00
10	3~	400	50	1050	1134	1.64	72	79	80	83	13190	126	7765	0.51
11	3~	400	50	1050	1348	1.94	69	76	79	81	9765	253	5745	1.02
12	3~	400	50	1050	1403	2.02	71	78	84	85	6805	330	4005	1.32
13	3~	400	50	850	436	0.63	71	79	80	82	12860	0	7570	0.00
14	3~	400	50	850	602	0.87	66	74	75	77	10680	83	6285	0.33
15	3~	400	50	850	715	1.03	63	71	74	75	7905	166	4650	0.67
16	3~	400	50	850	744	1.07	66	73	78	79	5510	217	3245	0.87

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