

EC axial panel fan - AxiCool

sickle-shaped blades (S series)
Fan housing with guide vanes

ebm-papst Mulfingen GmbH & Co. KGaA & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
info1@de.fansco.com
www.fansco.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	W3G800-NV05-10	
Motor	M3G150-NA	
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	1270
Power consumption	W	4000
Current draw	A	6.0
Max. back pressure	Pa	380
Max. back pressure	in. wg	1.53
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	45

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

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), a fan design with special low-temperature bearings must be used.

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

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	56.2	37.4	09 Power consumption P_{ed}	kW	3.92
02 Measurement category		A		09 Air flow q_v	m³/h	22750
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	334
04 Efficiency grade N		58.8	40	10 Speed (rpm) n	min ⁻¹	1275
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

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).

LU-190344

EC axial panel fan - AxiCool

sickle-shaped blades (S series)

Fan housing with guide vanes

Technical description

Weight	62.6 kg
Size	800 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Blade material	PP plastic
Support plate material	Sheet steel, galvanized and painted black
Support ring material	Steel, coated with black plastic (RAL 9005)
Fan housing material	PP plastic
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
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	See fitting instructions
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

EC axial panel fan - AxiCool

sickle-shaped blades (S series)

Fan housing with guide vanes

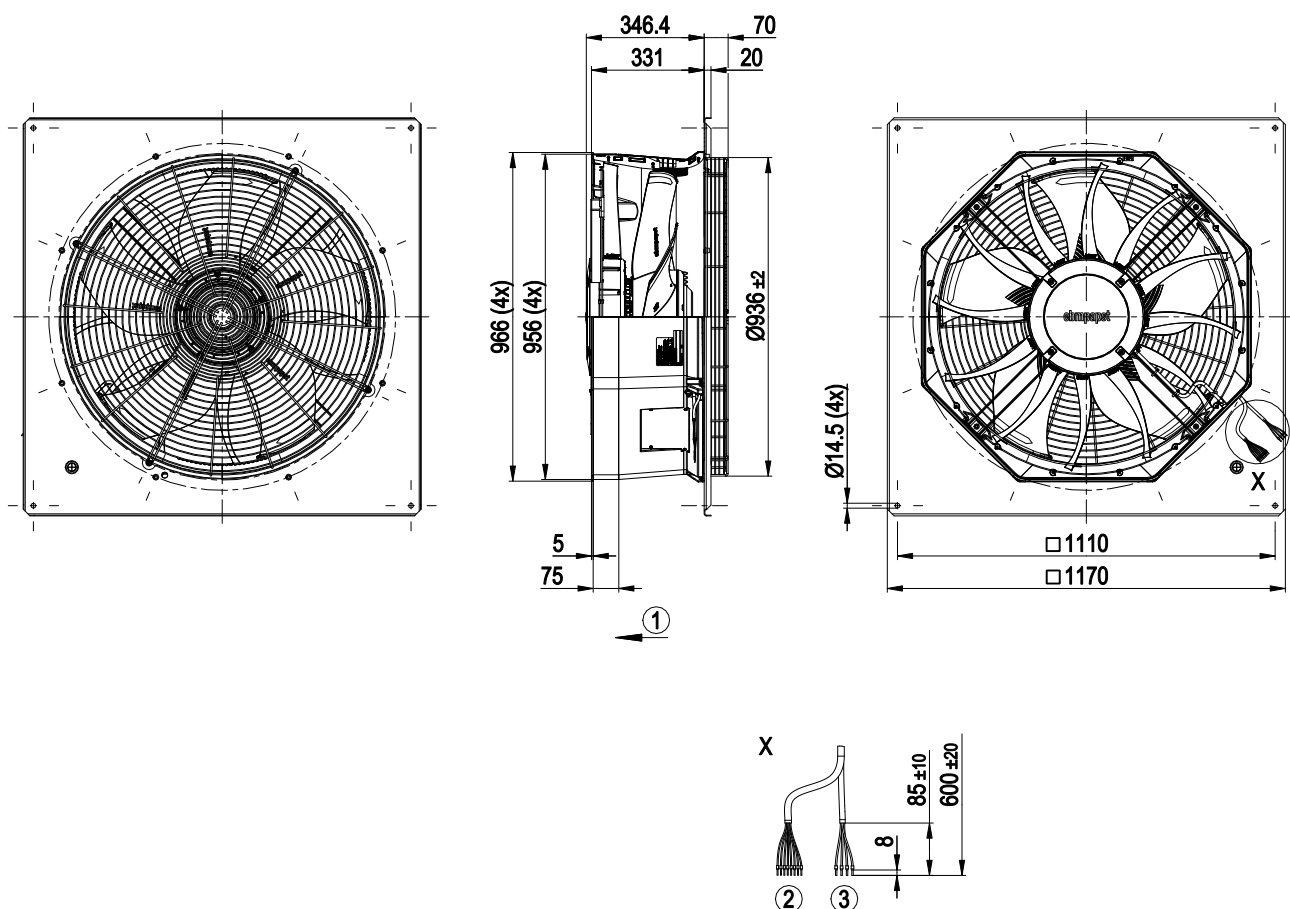
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Electronic motor protection; Reverse polarity and locked-rotor protection
Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class 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

EC axial panel fan - AxiCool

sickle-shaped blades (S series)

Fan housing with guide vanes

Product drawing

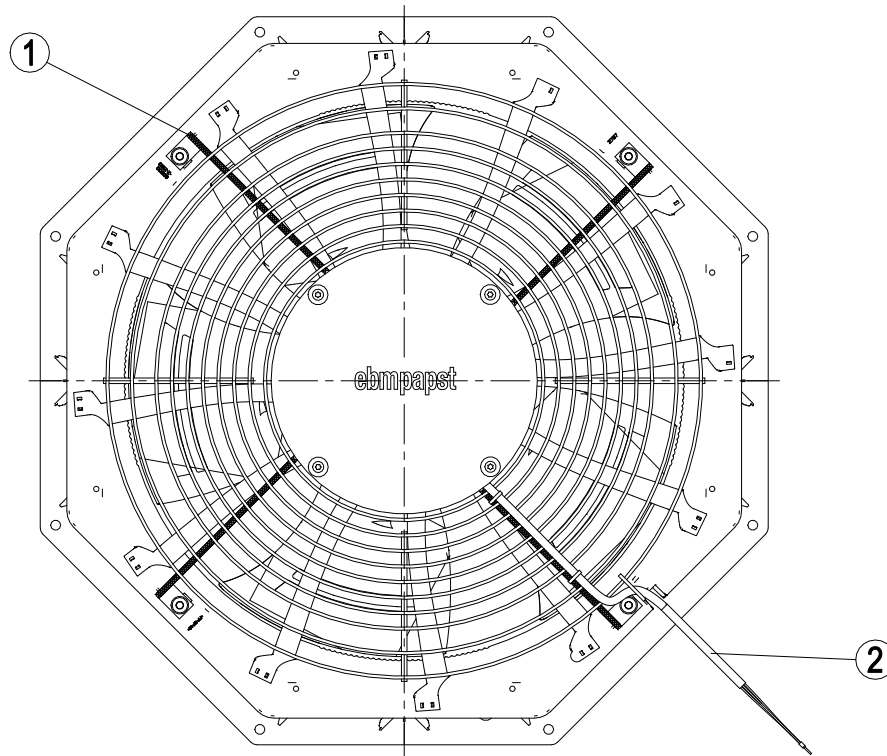


1	Airflow direction "V"
2	Cable silicone 8x 0.5 mm ²
	8x wire-end ferrule
3	Cable silicone 4G 1.5 mm ²
	4x wire-end ferrule

EC axial panel fan - AxiCool

sickle-shaped blades (S series)

Fan housing with guide vanes



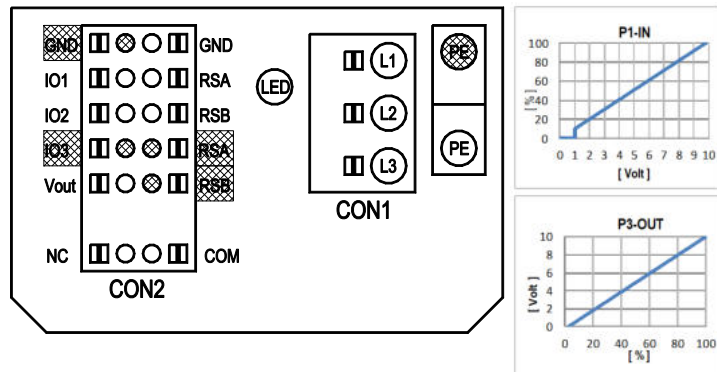
- | | |
|---|---|
| 1 | Installation position: Shaft horizontal (install support struts only in X-position as illustrated) or rotor on bottom |
| 2 | For horizontal shaft installation position, the cable exit must be at the bottom right. |

EC axial panel fan - AxiCool

sickle-shaped blades (S series)

Fan housing with guide vanes

Connection diagram



shaded gray => not brought out via leads

No.	Conn.	Designation	Color	Function/assignment
	CON1	L1	black	Power supply, phase, see nameplate for voltage range
	CON1	L2	brown	Power supply, phase, see nameplate for voltage range
	CON1	L3	blue	Power supply, phase, see nameplate for voltage range
	PE	PE	green/yellow	Protective earth
	CON2	RSA	gray	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	brown	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	blue	Reference ground for control interface, SELV
	CON2	IO1	green	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	yellow	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	red	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	white 1	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	white 2	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

EC axial panel fan - AxiCool

sickle-shaped blades (S series)
Fan housing with guide vanes

Terminal/plug assignment

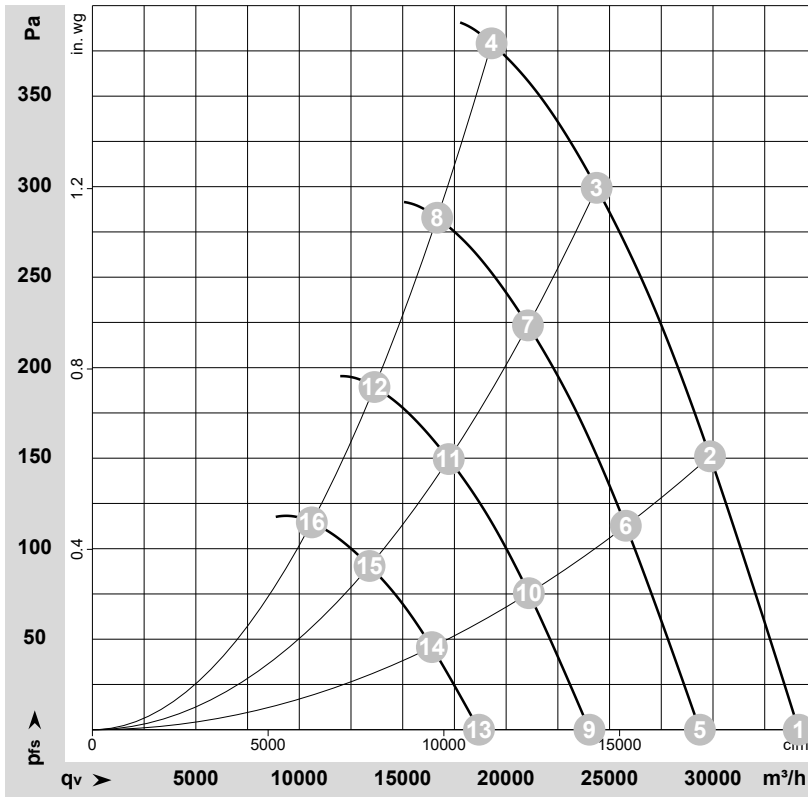
configurable option		For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.3		configurable IO functions: normal / inverse	MODBUS Register for IO mode configuration	electrical specification	configurable IO mode	CON2	inverse																	
									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: fan enable / disable	D16A [...]	(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	D130 [1]								
	○ Ain1 0-10V/PWM: analog input	RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV	D158 [2]	○	switch: set value source	D16C [...]	(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	D130 [1]								
	○ Tach out (open collector output)	Umax = 50VDC, Imax = 20mA, SELV	D158 [5]	○	switch: direction of rotation: cw / ccw	D148 [...]	(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	D130 [1]								
	○ Diagnostics out (open collector output)	Umax = 50VDC, Imax = 20mA, SELV	D158 [6]	○	switch: control function: heating (pos.) / cooling (neg.)	D12E [...]	(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	D130 [1]								
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	D104 [...]	(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	D130 [1]								
	○ Ain2 0-10V/PWM: analog input	RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV	D159 [2]	○	switch: sensor value	D147 [...]	(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	D130 [1]								
	○ Ain2 4-20mA: analog input	RI = 125R, characteristic curve parameterizable, SELV	D159 [3]	○	switch: set value source	D16C [...]	(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	D130 [1]								
	○ Din3 (active high): digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC	D15A [0]	○	switch: fan enable / disable	D16A [...]	(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	D130 [1]								
IO3	○ Din3 (active low): digital input	active: applied voltage < 1.5VDC, SELV not active: pin open or applied voltage 3.5-50VDC	D15A [1]	○	switch: set value source	D16C [...]	(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	D130 [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]	○	switch: control function: heating (pos.) / cooling (neg.)	D12E [...]	(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	D130 [1]								
	○ 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]	○	switch: direction of rotation: cw / ccw	D148 [...]	(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	D130 [1]								
	○ Aout3 0-10V: analog output	function parameterizable, max. 5mA max output frequency 300Hz, SELV	D15A [4]	○	switch: parameter set: #1 / #2	D104 [...]	(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	D130 [1]								
Vout	○ Tacho out (pulses), analog output	0-10V max. 5mA max output frequency 300Hz, SELV	D15A [5]	○	switch: sensor value	D147 [...]	(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	D130 [1]								
	○ Diagnostics out (pulses)	0-10V max. 5mA max output frequency 300Hz, SELV	D15A [6]	○	switch: set value source	D16C [...]	(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	D130 [1]								
RSA	RS485 bus connection,	MODBUS RTU, specification V6.3, SELV		○	switch: fan enable / disable	D16A [...]	(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	D130 [1]								
RSB				○	switch: direction of rotation: cw / ccw	D148 [...]	(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	D130 [1]								
Vout	voltage output	voltage parameterizable 3.3..24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]	○	switch: control function: heating (pos.) / cooling (neg.)	D12E [...]	(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	D130 [1]								
	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 [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	D130 [1]								

EC axial panel fan - AxiCool

sickle-shaped blades (S series)

Fan housing with guide vanes

Curves: Air performance 50 Hz



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

Measurement: LU-190344-1
Date: 2017-12-13
Housing: 60800-2-2910

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 _{ed}	I	LpA _{in}	LwA _{in}	LwA _{out}	q _V	p _{fs}	q _V	p _{fs}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	m ³ /h	Pa	cfm	in. wg
1	3~	400	50	1270	2802	4.31	81	90	89	34145	0	20095	0.00
2	3~	400	50	1270	3388	5.18	80	89	88	29855	150	17575	0.60
3	3~	400	50	1270	3846	5.86	84	91	92	24375	300	14345	1.20
4	3~	400	50	1270	4000	6.00	91	98	99	19300	380	11360	1.53
5	3~	400	50	1100	1782	2.74	77	86	85	29365	0	17285	0.00
6	3~	400	50	1100	2183	3.34	76	86	84	25785	113	15180	0.45
7	3~	400	50	1100	2479	3.78	80	88	88	21055	223	12395	0.90
8	3~	400	50	1100	2555	3.89	87	94	95	16665	283	9810	1.14
9	3~	400	50	900	976	1.50	72	81	80	24025	0	14140	0.00
10	3~	400	50	900	1196	1.83	71	81	79	21100	75	12420	0.30
11	3~	400	50	900	1358	2.07	75	83	83	17225	150	10140	0.60
12	3~	400	50	900	1400	2.13	82	89	90	13635	189	8025	0.76
13	3~	400	50	700	459	0.71	66	75	74	18690	0	11000	0.00
14	3~	400	50	700	563	0.86	65	74	73	16410	46	9660	0.18
15	3~	400	50	700	639	0.97	69	76	76	13400	90	7885	0.36
16	3~	400	50	700	658	1.00	76	83	83	10605	115	6240	0.46

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_{ed} = 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