

EC axial fan - AxiBlade

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

W3G630-NS37-05 ebmpapst Datasheet
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Nominal data

Type	W3G630-NS37-05	
Motor	M3G150-FF	
Phase		3~
Nominal voltage	VAC	200
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min ⁻¹	1750
Power consumption	W	3100
Current draw	A	9.4
Max. back pressure	Pa	380
Max. back pressure	in. wg	1.53
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

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}	%	51.7	36.7	09 Power consumption P_{ed}	kW	2.99
02 Measurement category	A			09 Air flow q_v	m³/h	15205
03 Efficiency category	Static			09 Pressure increase p_{fs}	Pa	348
04 Efficiency grade N	55		40	10 Speed (rpm) n	min ⁻¹	1750
05 Variable speed drive	Yes			11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-211510

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	33.9 kg
Size	630 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Blade 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	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
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
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
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	Reverse polarity and locked-rotor protection



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Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 61800-5-1; CE
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

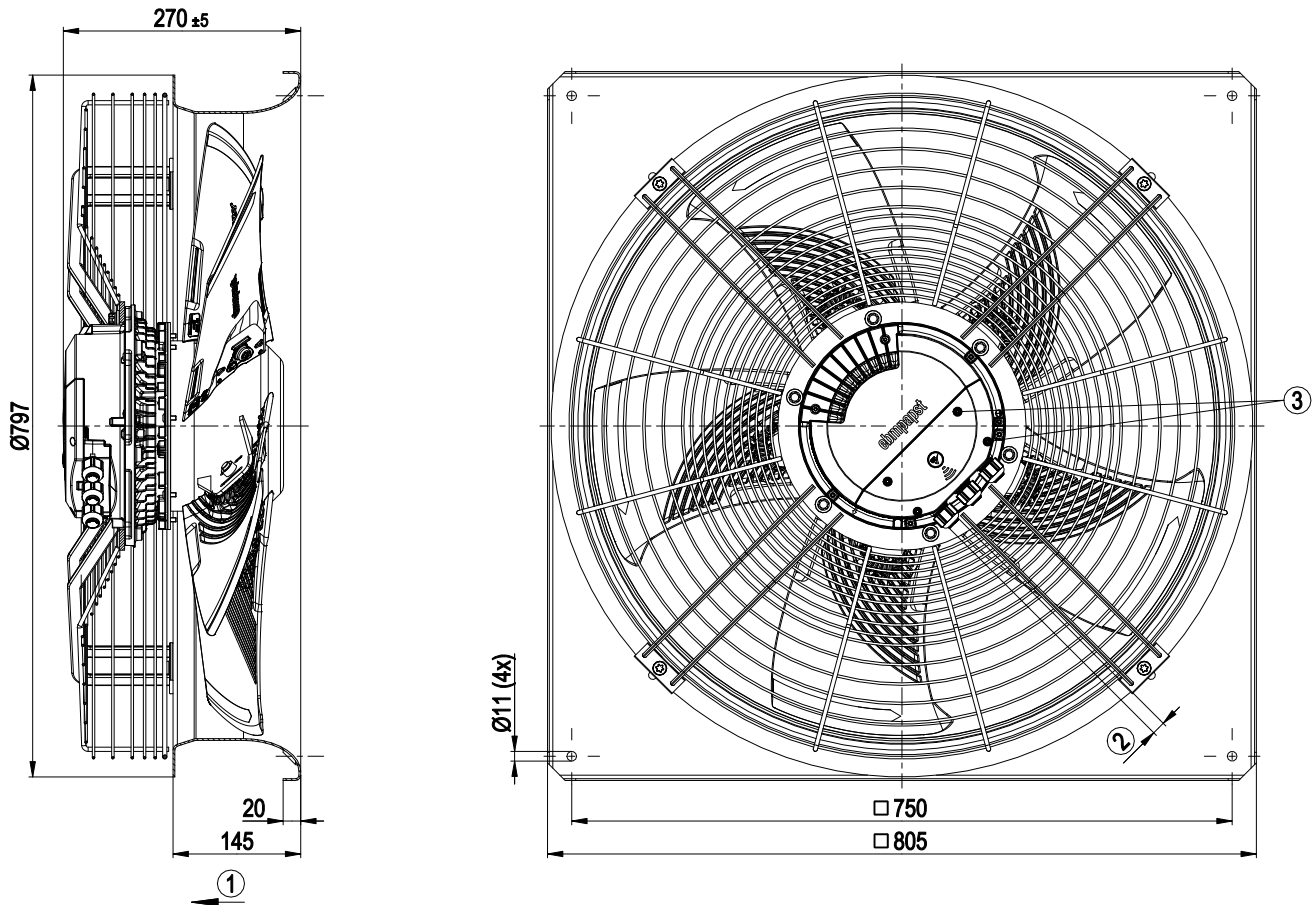


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Product drawing



1	Airflow direction "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm (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

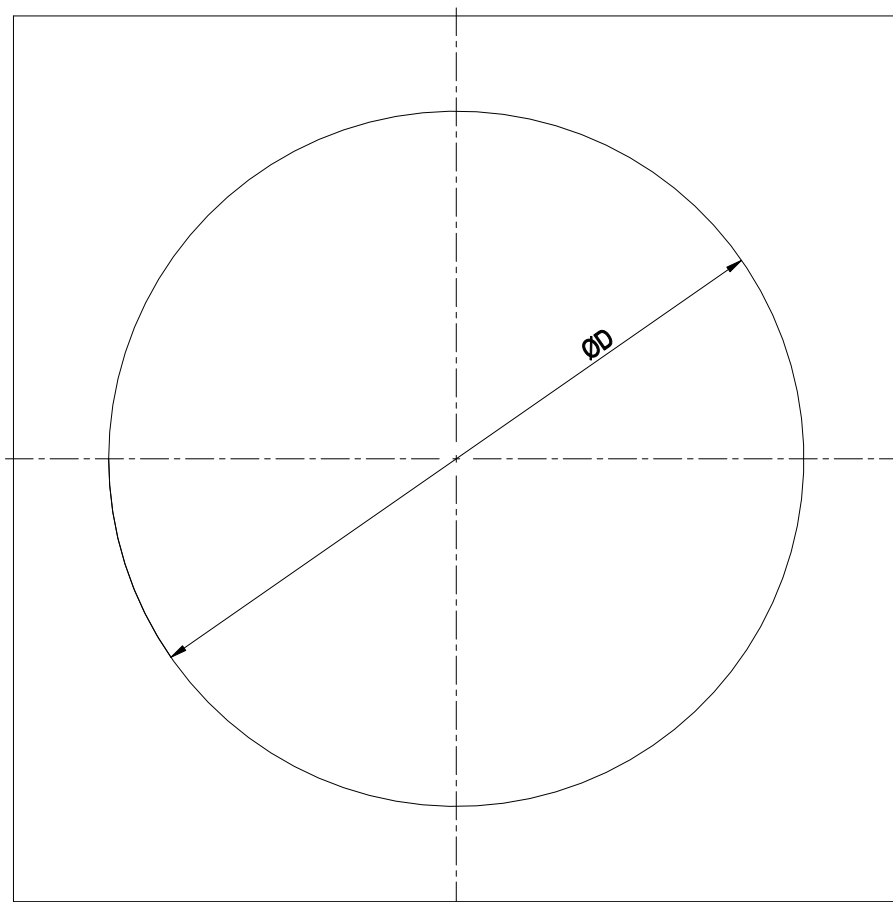


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Mounting dimensions



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

BG630: D = Ø785 mm

BG710: D = Ø830 mm

BG800: D = Ø950 mm

BG910: D = Ø1050 mm

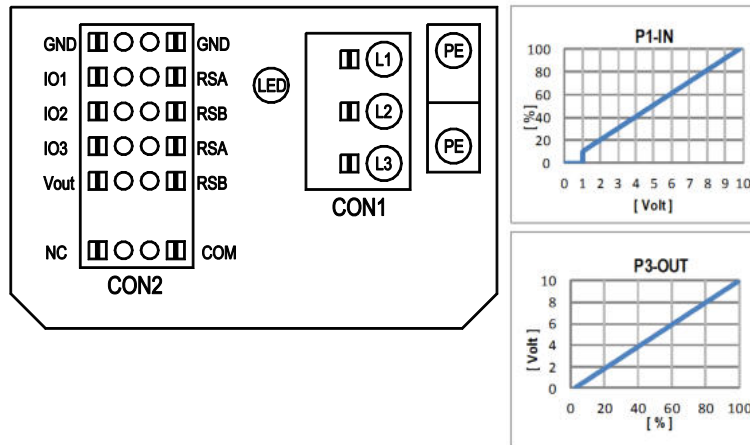


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Connection diagram



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: 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 IO functions: normal / inverse	MODBUS Register for IO mode configuration	electrical specification		configurable IO mode															
				configurable IO mode																	
CON2	IO1	◦ Din1 (active high): digital input ◦ Ain1 0-10V/PWM: analog input ◦ Tach out (open collector output) ◦ Diagnostics out (open collector output)	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz SELV Umax = 50VDC, Imax = 20mA SELV Umax = 50VDC, Imax = 20mA SELV	D158 [0] D158 [2] D158 [5] D158 [6]	source: set value source: sensor value switch: parameter set: #1 / #2 switch: control function: heating (pos.) / cooling (neg.) switch: direction of rotation: cw / ccw switch: set value source switch: fan enable / disable	(selected directly via IO mode) signal: tach out signal: diagnostics out signal: fan modulation level % signal: actual speed signal: system modulation level % signal: remote control output 0-10V pulse input for auto-addressing	(selected directly via IO mode)	D101 [...] D147 [...] D104 [...] D12E [...] D148 [...] D16C [...] D16A [...]	INPUT	D130 [4] D130 [1] D130 [2] D130 [5] D00C [1]	OUTPUT	(selected directly via IO mode)	(selected directly via IO mode)	D130 [0] D130 [1] D130 [2] D130 [5] D00C [1]	pulse output for auto-addressing						
IO2	◦ Din2 (active high): digital input ◦ Ain2 0-10V/PWM: analog input ◦ Ain2 4-20mA: analog input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz SELV RI = 125R, characteristic curve parameterizable, SELV	D159 [0] D159 [2] D159 [3]	source: set value source: sensor value switch: parameter set: #1 / #2 switch: control function: heating (pos.) / cooling (neg.) switch: direction of rotation: cw / ccw switch: set value source switch: fan enable / disable	(selected directly via IO mode) signal: tach out signal: diagnostics out signal: fan modulation level % signal: actual speed signal: system modulation level % signal: remote control output 0-10V pulse input for auto-addressing	(selected directly via IO mode)	D101 [...] D147 [...] D104 [...] D12E [...] D148 [...] D16C [...] D16A [...]	INPUT	D130 [4] D130 [1] D130 [2] D130 [5] D00C [1]	OUTPUT	(selected directly via IO mode)	(selected directly via IO mode)	D130 [0] D130 [1] D130 [2] D130 [5] D00C [1]	pulse output for auto-addressing							
IO3	◦ Din3 (active high): digital input ◦ Din3 (active low): digital input ◦ PWMIn3: digital input, idle level high ◦ PWMIn3: digital input, idle level low	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3.5-50VDC PWM = 40Hz - 10KHz, characteristics parameterizable active: pin open or applied voltage 3.5-50VDC not active: applied voltage < 1.5VDC, SELV 40Hz - 10KHz, characteristics parameterizable active: applied voltage 3.5-50VDC not active: pin open or applied voltage < 1.5VDC, SELV	D15A [0] D15A [1] D15A [7] D15A [8]	source: set value source: sensor value switch: parameter set: #1 / #2 switch: control function: heating (pos.) / cooling (neg.) switch: direction of rotation: cw / ccw switch: set value source switch: fan enable / disable	(selected directly via IO mode) signal: tach out signal: diagnostics out signal: fan modulation level % signal: actual speed signal: system modulation level % signal: remote control output 0-10V pulse input for auto-addressing	(selected directly via IO mode)	D101 [...] D147 [...] D104 [...] D12E [...] D148 [...] D16C [...] D16A [...]	INPUT	D130 [4] D130 [1] D130 [2] D130 [5] D00C [1]	OUTPUT	(selected directly via IO mode)	(selected directly via IO mode)	D130 [0] D130 [1] D130 [2] D130 [5] D00C [1]	pulse output for auto-addressing							
RSA RSB	◦ Aout3 0-10V: analog output ◦ Tacho out (pulses), analog output ◦ Diagnostics out (pulses)	function parameterizable, max. 5mA max output frequency 300Hz SELV 0-10V/max. 5mA max output frequency 300Hz SELV 0-10V/max. 5mA max output frequency 300Hz SELV	D15A [4] D15A [5] D15A [6]	source: set value source: sensor value switch: parameter set: #1 / #2 switch: control function: heating (pos.) / cooling (neg.) switch: direction of rotation: cw / ccw switch: set value source switch: fan enable / disable	(selected directly via IO mode) signal: tach out signal: diagnostics out signal: fan modulation level % signal: actual speed signal: system modulation level % signal: remote control output 0-10V pulse input for auto-addressing	(selected directly via IO mode)	D101 [...] D147 [...] D104 [...] D12E [...] D148 [...] D16C [...] D16A [...]	INPUT	D130 [4] D130 [1] D130 [2] D130 [5] D00C [1]	OUTPUT	(selected directly via IO mode)	(selected directly via IO mode)	D130 [0] D130 [1] D130 [2] D130 [5] D00C [1]	pulse output for auto-addressing							
Vout	voltage output alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage	voltage parameterizable 3.3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV 15...50VDC	D16E [...]	source: set value source: sensor value switch: parameter set: #1 / #2 switch: control function: heating (pos.) / cooling (neg.) switch: direction of rotation: cw / ccw switch: set value source switch: fan enable / disable	(selected directly via IO mode) signal: tach out signal: diagnostics out signal: fan modulation level % signal: actual speed signal: system modulation level % signal: remote control output 0-10V pulse input for auto-addressing	(selected directly via IO mode)	D101 [...] D147 [...] D104 [...] D12E [...] D148 [...] D16C [...] D16A [...]	INPUT	D130 [4] D130 [1] D130 [2] D130 [5] D00C [1]	OUTPUT	(selected directly via IO mode)	(selected directly via IO mode)	D130 [0] D130 [1] D130 [2] D130 [5] D00C [1]	pulse output for auto-addressing							

◦ configurable option

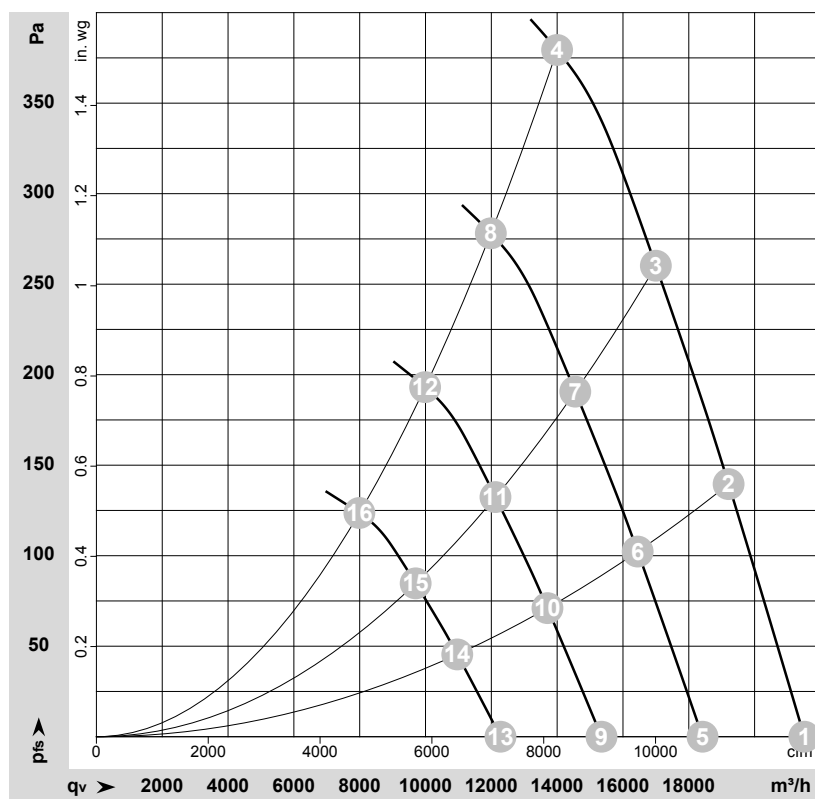
For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.3

◦ configurable option

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



Curves: Air performance 50 Hz



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

Measurement: LU-211510-1

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~	200	50	1750	1741	5.35	77	85	86	21510	0	12660	0.00
2	3~	200	50	1750	2287	6.98	76	84	85	19210	140	11305	0.56
3	3~	200	50	1750	2707	8.24	78	85	86	17000	260	10005	1.04
4	3~	200	50	1750	3100	9.40	83	91	92	14000	380	8240	1.53
5	3~	200	50	1500	1093	3.36	73	81	82	18420	0	10840	0.00
6	3~	200	50	1500	1435	4.38	72	80	81	16445	104	9680	0.42
7	3~	200	50	1500	1698	5.16	74	81	82	14550	191	8565	0.77
8	3~	200	50	1500	1945	5.90	80	87	88	11985	279	7055	1.12
9	3~	200	50	1250	632	1.94	69	76	78	15350	0	9035	0.00
10	3~	200	50	1250	831	2.53	68	75	76	13705	72	8065	0.29
11	3~	200	50	1250	983	2.99	70	77	78	12125	132	7135	0.53
12	3~	200	50	1250	1126	3.41	75	82	83	9990	193	5880	0.77
13	3~	200	50	1000	324	1.00	63	71	72	12280	0	7225	0.00
14	3~	200	50	1000	425	1.30	62	69	71	10965	46	6455	0.18
15	3~	200	50	1000	503	1.53	64	71	72	9700	85	5710	0.34
16	3~	200	50	1000	576	1.75	69	76	77	7990	124	4705	0.50

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

