

8300100379
VBF0630PTVNS

EC centrifugal module - RadiPac

backward-curved, single-intake
with cube design

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Nominal data

Item	8300100379	
Motor	E20003-75	
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	1840
Power consumption	W	8000
Current draw	A	12.3
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}	%	68.8	61	09 Power consumption P_{ed}	kW	8
02 Measurement category		A		09 Air flow q_v	m³/h	15650
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	1226
04 Efficiency grade N		69.8	62	10 Speed (rpm) n	min ⁻¹	1840
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-211639

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	90 kg
Size	630 mm
Motor size	200
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Spacer material	Aluminum
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
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 legend on product drawing
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 - 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
Motor protection	Electronic motor 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	UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1



8300100379

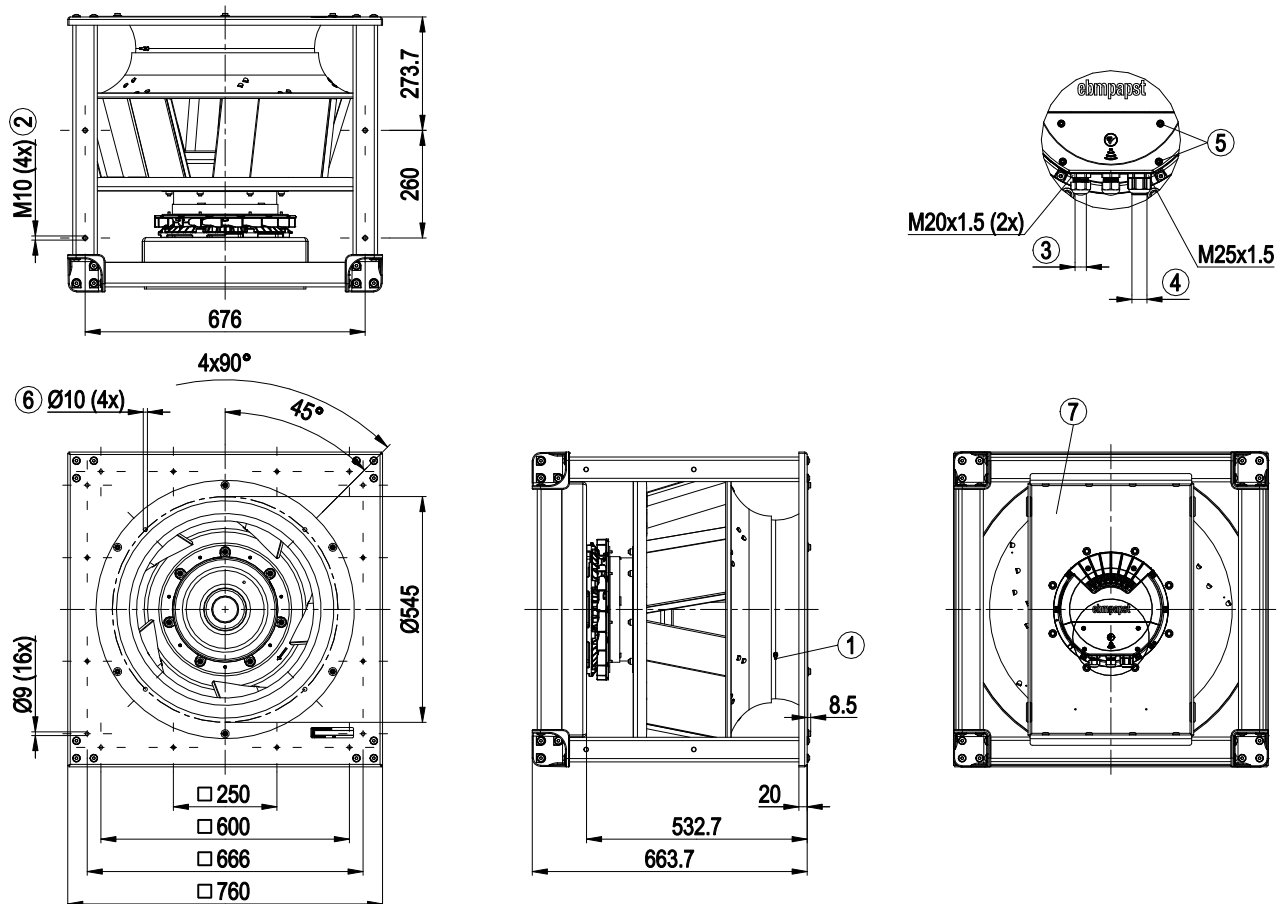
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Product drawing



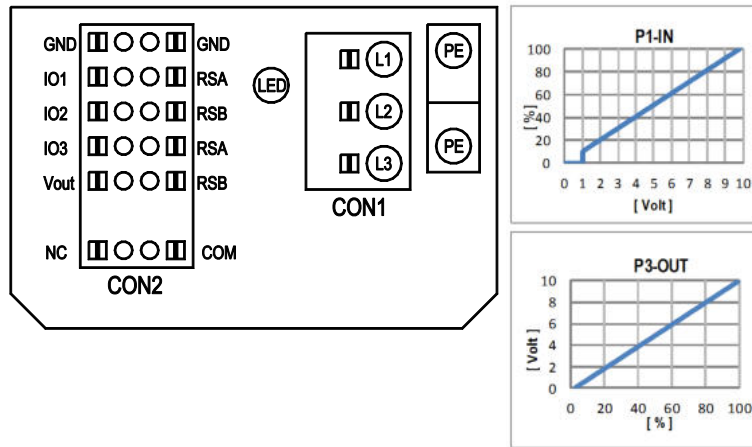
1	Inlet ring with pressure tap (k-factor: 438)
2	Mounting position for vibration-absorbing elements, tightening torque max. 40 Nm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
4	Cable diameter min. 5 mm, max. 14 mm, tightening torque 6 ± 0.9 Nm
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
5	Tightening torque 3 ± 0.3 Nm
6	Attachment holes for FlowGrid 00630-2-2957 (not included in scope of delivery)
7	Motor support plate
	Installation position: Only base mounting, shaft horizontal (motor support plate must be vertical!). Rotor on top or rotor on bottom on request
	The drawing shows the dimensions only and does not represent the installation position



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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



Terminal/plug assignment

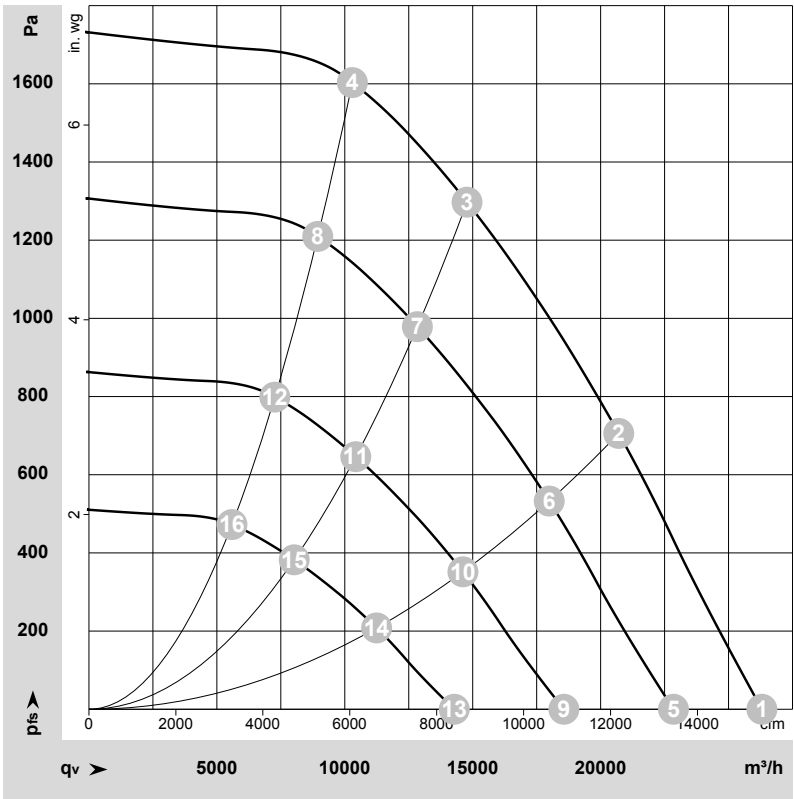
configurable option		For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.4		configurable IO functions: normal / inverse	MODBUS Register for IO mode configuration	electrical specification	configurable IO mode	CON2	OUTPUT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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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	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	○ 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 [10]	signal: diagnostics out	D130 [11]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [10]	signal: actual speed	D130 [2]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	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: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	○ Diagnostics out (open collector output)	U _{max} = 50VDC, I _{max} = 20mA, SELV	D158 [6]	○	switch: control function: heating (pos.) / cooling (neg.)	D12E [...]	(selected directly via IO mode)	D130 [10]	signal: diagnostics out	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	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: parameter set: #1 / #2	D104 [...]	(selected directly via IO mode)	D130 [10]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	○ Ain2 0-10V/PWM: analog input	RI = 100k, characteristic curve parameterizable, f _{PWM} = 1k..10kHz, SELV	D159 [2]	○	source: sensor value	D147 [...]	(selected directly via IO mode)	D130 [10]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	○ Ain2 4-20mA: analog input	RI = 125R, characteristic curve parameterizable, SELV	D159 [3]	○	switch: set value source	D16C [...]	(selected directly via IO mode)	D130 [10]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	○ 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 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	○ PWMIn3: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable	D15A [7]	○	switch: control function: heating (pos.) / cooling (neg.)	D12E [...]	(selected directly via IO mode)	D130 [10]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	○ PWMIn3: digital input idle level low	active: pin open or applied voltage 3.5-50VDC not active: applied voltage < 1.5VDC, SELV	D15A [8]	○	switch: direction of rotation: cw / ccw	D148 [...]	(selected directly via IO mode)	D130 [10]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	○ Aout3 0-10V: analog output	active: applied voltage 3.5-50VDC not active: pin open or applied voltage < 1.5VDC, SELV	D15A [4]	○	switch: parameter set: #1 / #2	D104 [...]	(selected directly via IO mode)	D130 [10]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
RSA RSB	○ Tacho out (pulses), analog output	function parameterizable, max. 5mA max output frequency 300Hz, SELV	D15A [5]	○	switch: control function: heating (pos.) / cooling (neg.)	D12E [...]	(selected directly via IO mode)	D130 [10]	signal: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	○ 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: tach out	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Vout	○ RS485 bus connection,	MODBUS RTU, specification V6.4, SELV		○	switch: fan enable / disable	D16A [...]	(selected directly via IO mode)	D130 [0]	signal: fan modulation level %	D130 [11]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																



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Curves: Air performance 50 Hz



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

Measurement: LU-211639-1

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 _e	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	1840	3991	6.28	87	95	98	26305	0	15480	0.00
2	3~	400	50	1840	6707	10.29	83	91	94	20710	700	12190	2.81
3	3~	400	50	1840	8000	12.30	82	89	94	14780	1300	8700	5.22
4	3~	400	50	1840	7820	11.94	84	91	96	10295	1600	6060	6.42
5	3~	400	50	1600	2616	4.12	84	92	94	22850	0	13450	0.00
6	3~	400	50	1600	4398	6.75	80	87	91	17990	533	10590	2.14
7	3~	400	50	1600	5270	8.04	78	85	90	12835	979	7555	3.93
8	3~	400	50	1600	5125	7.83	81	88	93	8945	1210	5265	4.86
9	3~	400	50	1300	1403	2.21	79	86	89	18565	0	10925	0.00
10	3~	400	50	1300	2359	3.62	74	82	86	14620	352	8605	1.41
11	3~	400	50	1300	2827	4.31	73	80	85	10430	646	6140	2.59
12	3~	400	50	1300	2749	4.20	75	83	88	7265	799	4275	3.21
13	3~	400	50	1000	639	1.00	72	80	82	14280	0	8405	0.00
14	3~	400	50	1000	1074	1.65	68	75	79	11245	208	6620	0.84
15	3~	400	50	1000	1287	1.96	66	73	79	8025	382	4720	1.53
16	3~	400	50	1000	1251	1.91	69	76	81	5590	473	3290	1.90

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

