

8300100936
VBH0630CTTRZ

EC centrifugal module - RadiPac

backward-curved, single-intake
with support bracket

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Nominal data

Item	8300100936	
Motor	E15034-120	
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	1910
Power consumption	W	5850
Current draw	A	9.0
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}	%	75.7	59.5	09 Power consumption P_{ed}	kW	5.75
02 Measurement category		A		09 Air flow q_v	m³/h	15840
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	956
04 Efficiency grade N		78.2	62	10 Speed (rpm) n	min ⁻¹	1910
05 Variable speed drive		Yes		11 Specific ratio*		1.01

Data obtained at optimum efficiency level.
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).

* Specific ratio = $1 + p_b / 100\,000\text{ Pa}$ LU-213975

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Technical description

Weight	60
Size	630 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Impeller material	PP plastic
Support plate material	Sheet steel, galvanized and coated with light gray plastic (RAL 7035)
Support bracket material	Steel, painted light gray (RAL 7035)
Inlet nozzle material	ABS plastic
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2+S
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
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
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; UKCA; CE
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

8300100936

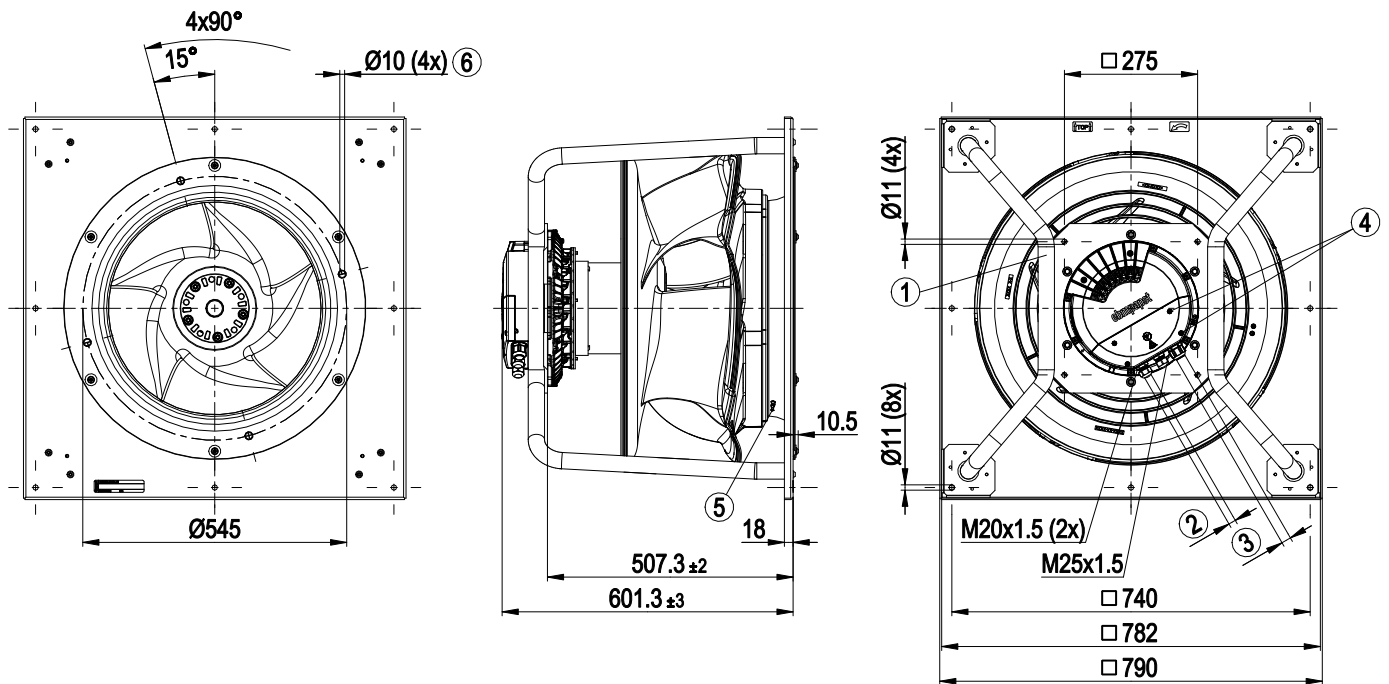
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Product drawing

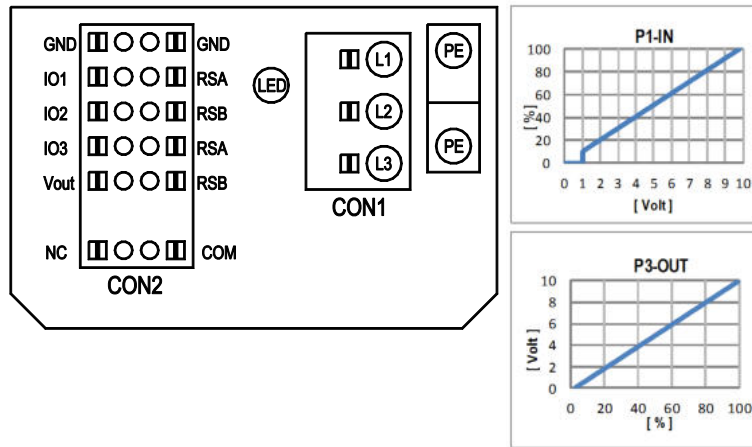


1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 5 mm, max. 14 mm, tightening torque 6 ± 0.9 Nm
	(The tightening torque 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	Inlet ring with pressure tap (k-factor: 463)
6	Fastening holes for FlowGrid 00630-2-2957 (not included in scope of delivery) are provided and must be subsequently opened as required

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Connection diagram



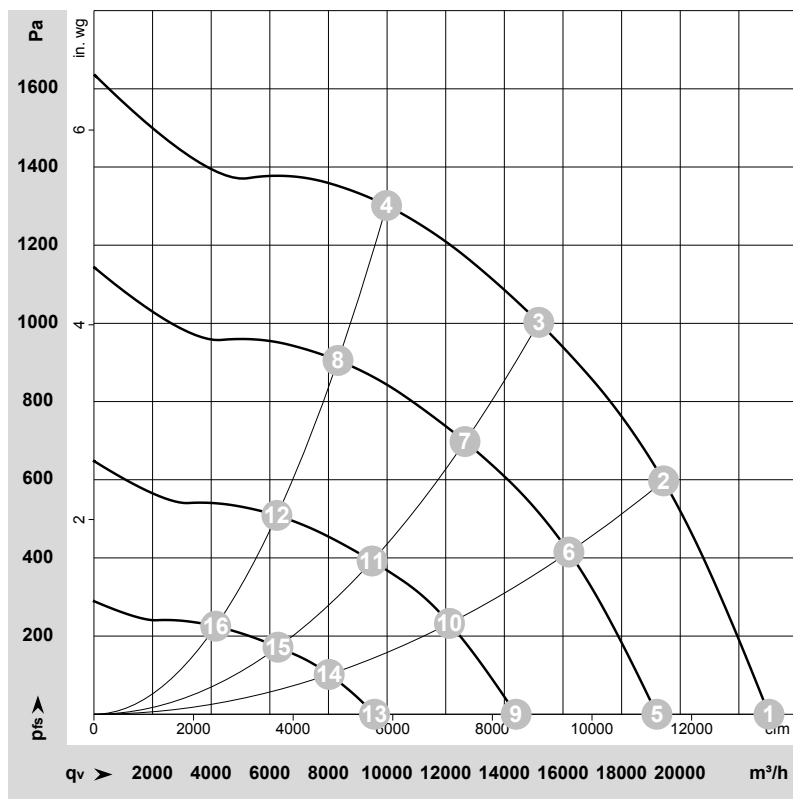
No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function 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			configurable IO functions: normal / inverse	MODBUS Register for IO mode configuration	electrical specification										OUTPUT									
CON2	configurable IO mode	○ 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	(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	D130 [4]							
		○ Ain1 0-10V/PWM: analog input			RI = 100K, characteristic curve parameterizable, $f_{PWM} = 1k..10kHz$, SELV	D158 [2]	○	switch: set value source									D130 [1]							
		○ Tach out (open collector output)			Umax = 50VDC, Imax = 20mA, SELV	D158 [5]	○	switch: direction of rotation: cw / ccw									D130 [5]							
		○ Diagnostics out (open collector output)			Umax = 50VDC, Imax = 20mA, SELV	D158 [6]											D130 [2]							
IO1	configurable IO mode	○ 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.)									D130 [1]							
		○ Ain2 0-10V/PWM: analog input			RI = 100K, characteristic curve parameterizable, $f_{PWM} = 1k..10kHz$, SELV	D159 [2]	○	switch: parameter set: #1 / #2									D130 [0]							
		○ Ain2 4-20mA: analog input			RI = 125R, characteristic curve parameterizable, SELV	D159 [3]	○	source: sensor value									(selected directly via IO mode)							
		○ 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									(selected directly via IO mode)							
IO2	configurable IO mode	○ Din3 (active low): digital input			active: applied voltage < 1.5VDC, SELV not active: pin open or applied voltage < 1.5VDC	D15A [1]	○	switch: set value source									D16A [...]							
		○ 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: direction of rotation: cw / ccw									D16C [...]									
		○ 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]	○										D148 [...]									
		○ Aout3 0-10V: analog output	function parameterizable, max. 5mA max output frequency 300Hz, SELV	D15A [4]		switch: control function: heating (pos.) / cooling (neg.)									D12E [...]									
IO3	configurable IO mode	○ Tacho out (pulses), analog output	0-10V max. 5mA max output frequency 300Hz, SELV	D15A [5]		source: sensor value									D104 [...]									
		○ Diagnostics out (pulses)	0-10V max. 5mA max output frequency 300Hz, SELV	D15A [6]											D147 [...]									
		○ Diagnostics out (pulses)	0-10V max. 5mA max output frequency 300Hz, SELV	D15A [6]											D101 [...]									
		○ Diagnostics out (pulses)	0-10V max. 5mA max output frequency 300Hz, SELV	D15A [6]																				
RSA	RS485 bus connection,	MODBUS RTU, specification V6.4, SELV		○																				
RSB				○																				
Vout	voltage output	voltage parameterizable 3.3..24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]	○																				
	alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage	15..50VDC		○																				

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

Curves: Air performance 50 Hz



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

Measurement: LU-213975-1
Date: 2021-06-01
Nozzle: 8217101925

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	1910	3472	5.56	86	94	97	99	23030	0	13555	0.00
2	3~	400	50	1910	5318	8.22	79	87	91	93	19435	600	11440	2.41
3	3~	400	50	1910	5850	9.00	74	82	87	88	15175	1000	8930	4.01
4	3~	400	50	1910	5592	8.65	76	84	89	90	9985	1300	5875	5.22
5	3~	400	50	1590	2047	3.50	81	89	93	94	19205	0	11300	0.00
6	3~	400	50	1595	3112	5.01	75	83	87	88	16200	417	9535	1.67
7	3~	400	50	1595	3382	5.40	70	78	82	84	12660	698	7450	2.80
8	3~	400	50	1595	3259	5.22	71	79	84	85	8325	906	4900	3.64
9	3~	400	50	1195	966	2.05	73	82	85	87	14400	0	8475	0.00
10	3~	400	50	1195	1308	2.49	67	75	79	81	12130	233	7140	0.94
11	3~	400	50	1195	1449	2.67	62	70	75	76	9490	392	5585	1.57
12	3~	400	50	1195	1444	2.66	62	70	75	76	6240	509	3675	2.04
13	3~	400	50	795	354	1.03	63	72	75	77	9570	0	5635	0.00
14	3~	400	50	795	474	1.24	57	65	69	71	8025	102	4725	0.41
15	3~	400	50	795	502	1.29	53	61	65	66	6280	172	3695	0.69
16	3~	400	50	795	492	1.28	51	58	62	64	4155	225	2445	0.90

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