

8300100695
VBH0310CTPLS

EC centrifugal module - RadiPac

backward-curved, single-intake
with support bracket

<https://www.fansco.com>

sales@fansco.com

Nominal data

Item	8300100695	
Motor	E09004-55	
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	3800
Power consumption	W	1500
Current draw	A	2.3
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	50

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}	%	65.2	53.3	09 Power consumption P_{ed}	kW	1.48
02 Measurement category		A		09 Air flow q_v	m ³ /h	3555
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	916
04 Efficiency grade N		73.9	62	10 Speed (rpm) n	min ⁻¹	3805
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-221879

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	12.58 kg
Size	310 mm
Motor size	90
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
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	H1 = Moist – occasional or constantly high level of humidity
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
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display with LED - Locked-rotor detection - Speed control - External 15-30 VDC input (parameterization) - Alarm relay - Configurable inputs/outputs (I/O) - Power limiter - MODBUS - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Control interface with SELV potential safely disconnected from the mains - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Power Factor Correction (PFC)	Passive (through low-capacitance DC link)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Electronic motor protection
With cable	Lateral

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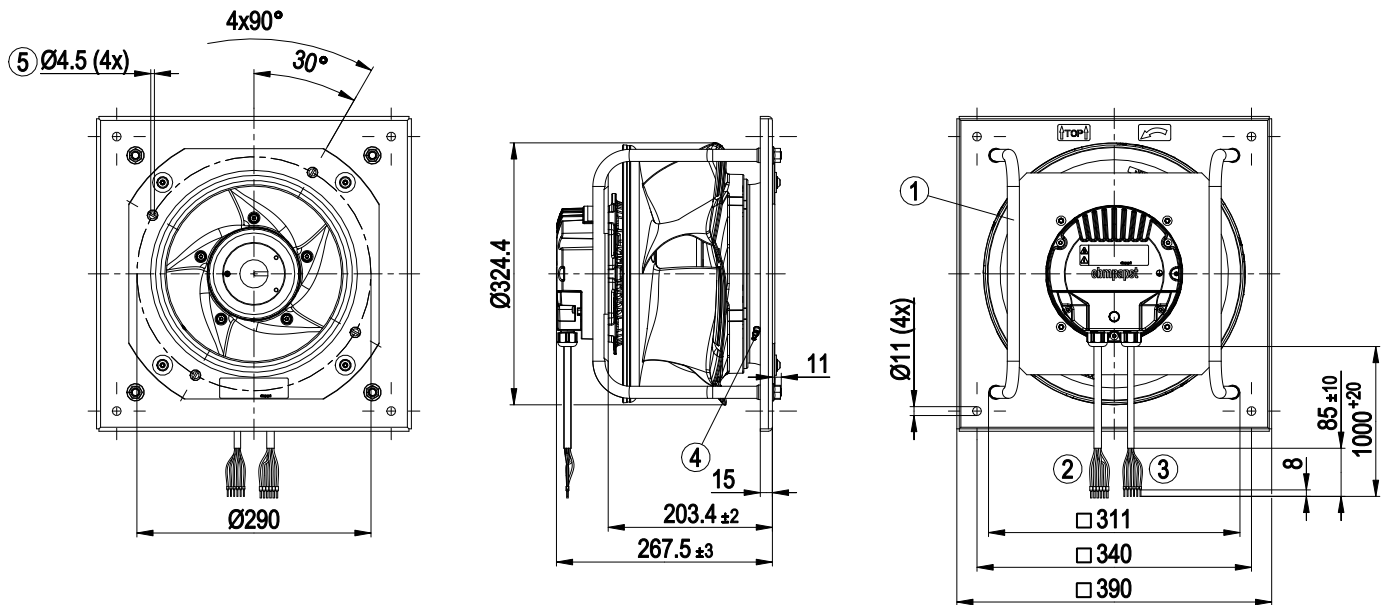
Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class assignments. The final protection class is determined by the intended installation.
Conformity with standards	EN 61800-5-1; CE

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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	Supply line (PWR) PVC AWG18 6x wire-end ferrule
3	Control wire (CTRL) PVC AWG22 6x wire-end ferrule
4	Inlet ring with pressure tap (k-factor: 115)
5	Fastening holes for FlowGrid 25310-2-2957 (not included in scope of delivery) are provided and must be subsequently opened as required

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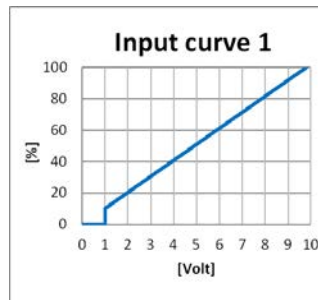
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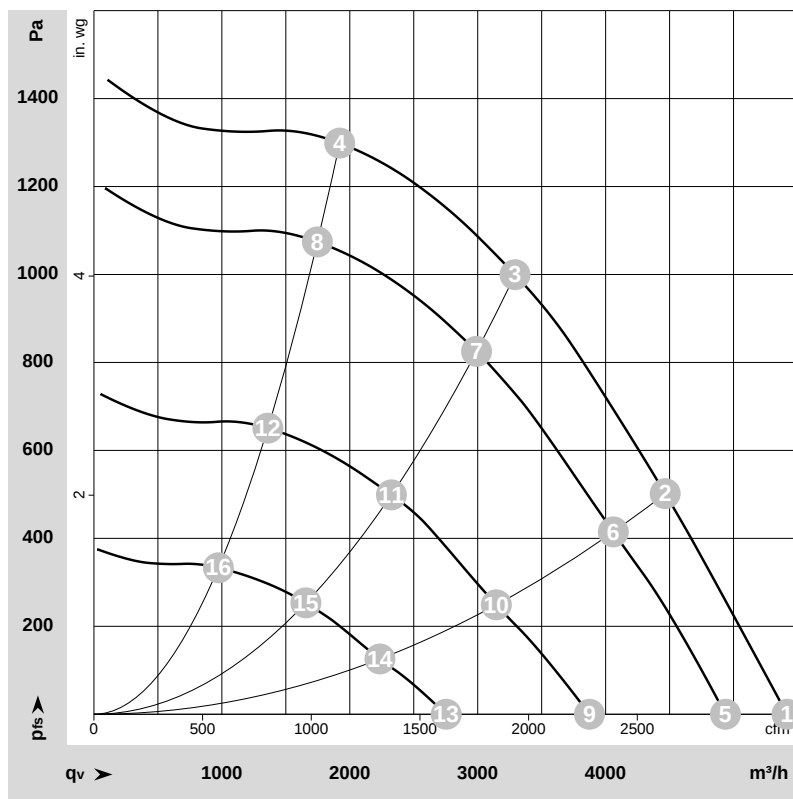
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
	PWR	PE	green/yellow	Protective earth
	PWR	L1, L2, L3	black 1-3	Power supply, phase, see nameplate for voltage range
	PWR	COM	orange	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
	PWR	NC	orange	Status relay, floating status contact, break for failure
	CTRL	GND	blue	Reference ground for control interface, SELV
	CTRL	Vout	red	Voltage output 10 VDC +/-3%, I _{max} =10 mA Short-circuit-proof, power supply for external devices, SELV alternative: 15-30 VDC input for parameterization via MODBUS without line voltage
	CTRL	IO1	yellow	Factory setting: Analog input 0-10 V / PWM, R _i =100 kΩ, function: set value Characteristic curve parameterizable (see input characteristic curve "Input curve 1"), SELV Function parameterizable (see table Optional interface functions)
	CTRL	IO2	white	Factory setting: Open collector output, U _{max} =50 VDC, I _{max} =20 mA, function:Tacho output 1 pulse/revolution, SELV Function parameterizable (see table Optional interface functions)
	CTRL	RSA	gray	RS-485 interface for MODBUS RSA, SELV dielectric strength to MODBUS RSB +/-14 V, dielectric strength to GND +/-7 V
	CTRL	RSB	brown	RS-485 interface for MODBUS RSB, SELV dielectric strength to MODBUS RSA +/-14 V, dielectric strength to GND +/-7 V
		LED		green: status = good, ready for operation orange: status = warning red: status = failure

Curves: Air performance 50 Hz



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

Measurement: LU-221879-1
Date: 2022-09-20
Nozzle: 8217101930

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 _{st}	q _v	P _{st}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	dB	m ³ /h	Pa	cfm	in. wg
1	3~	400	50	3800	1170	1.80	84	92	97	98	5420	0	3190	0.00
2	3~	400	50	3800	1287	1.98	77	85	90	91	4465	500	2630	2.01
3	3~	400	50	3800	1500	2.30	74	81	88	89	3290	1000	1940	4.01
4	3~	400	50	3800	1388	2.13	78	87	93	94	1920	1300	1130	5.22
5	3~	400	50	3455	887	1.38	82	90	94	96	4935	0	2905	0.00
6	3~	400	50	3455	970	1.51	74	82	87	89	4060	413	2390	1.66
7	3~	400	50	3455	1141	1.76	71	79	85	86	2990	827	1760	3.32
8	3~	400	50	3455	1053	1.63	76	84	90	91	1745	1074	1030	4.31
9	3~	400	50	2690	442	0.74	75	83	87	89	3875	0	2280	0.00
10	3~	400	50	2690	481	0.79	68	76	81	82	3145	247	1850	0.99
11	3~	400	50	2690	559	0.91	65	73	79	80	2325	500	1370	2.01
12	3~	400	50	2690	521	0.85	70	77	82	83	1360	651	800	2.61
13	3~	400	50	1920	191	0.41	66	75	79	80	2755	0	1620	0.00
14	3~	400	50	1920	204	0.43	59	67	72	74	2235	125	1315	0.50
15	3~	400	50	1920	232	0.46	57	65	70	71	1655	254	975	1.02
16	3~	400	50	1920	219	0.45	60	68	72	74	975	333	575	1.34

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_{st} = Pressure increase