

8300100217
VBH0630CTTRS

EC centrifugal module - RadiPac

backward-curved, single-intake
with support bracket

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Nominal data

Item	8300100217	
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	1950
Power consumption	W	6400
Current draw	A	9.8
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}	%	71	59.9	09 Power consumption P_{ed}	kW	6.26
02 Measurement category		A		09 Air flow q_v	m³/h	15945
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	971
04 Efficiency grade N		73.1	62	10 Speed (rpm) n	min ⁻¹	1945
05 Variable speed drive		Yes		11 Specific ratio*		1.01

Data obtained at optimum efficiency level.

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

LU-216705

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	57.2 kg
Size	630 mm
Motor size	150
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
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	- 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
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
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. 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; UKCA
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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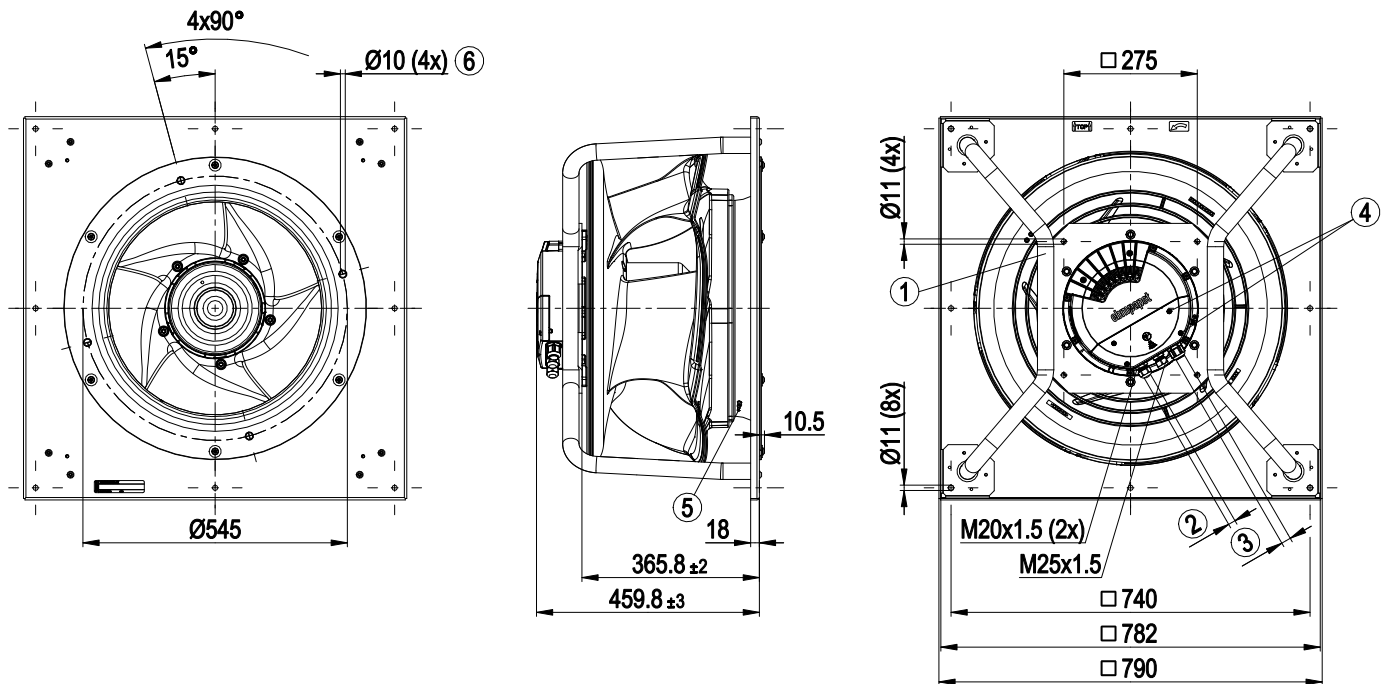
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Product drawing

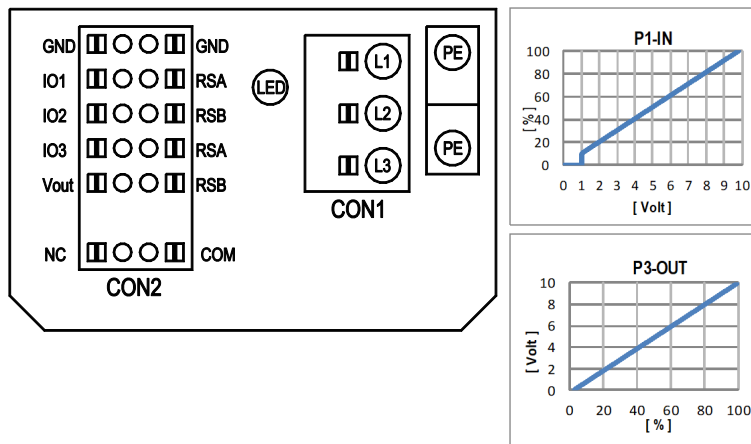


1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 5 mm, max. 14 mm, tightening torque 6 ± 0.9 Nm
	(The tightening torque 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		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	
										digital input			
IO1	Din1 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC		D158 [0]								
	Ain1 0-10V/PWM: analog input		Ri = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV		D158 [2]								
	Tach out (open collector output)		U _{max} = 50VDC, I _{max} = 20mA, SELV		D158 [5]								
	Diagnostics out (open collector output)		U _{max} = 50VDC, I _{max} = 20mA, SELV		D158 [6]								
IO2	Din2 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC		D159 [0]								
	Ain2 0-10V/PWM: analog input		Ri = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV		D159 [2]								
	Ain2 4-20mA: analog input		Ri = 125R, characteristic curve parameterizable, SELV		D159 [3]								
	Din3 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC		D15A [0]								
IO3	Din3 (active low): digital input		active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3.5-50VDC		D15A [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]								
	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]								
	Aou3 0-10V: analog output		function parameterizable, max. 5mA, max output frequency 300Hz, SELV		D15A [4]								
	Tacho out (pulses): analog output		0-10V max. 5mA, max output frequency 300Hz, SELV		D15A [5]								
	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	voltage output		voltage parameterizable 3.3...24VDC +/- 5%, P _{max} =800mW, short-circuit-proof, supply for external devices, SELV		D16E [-]								
Vout	alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage		15...50VDC										

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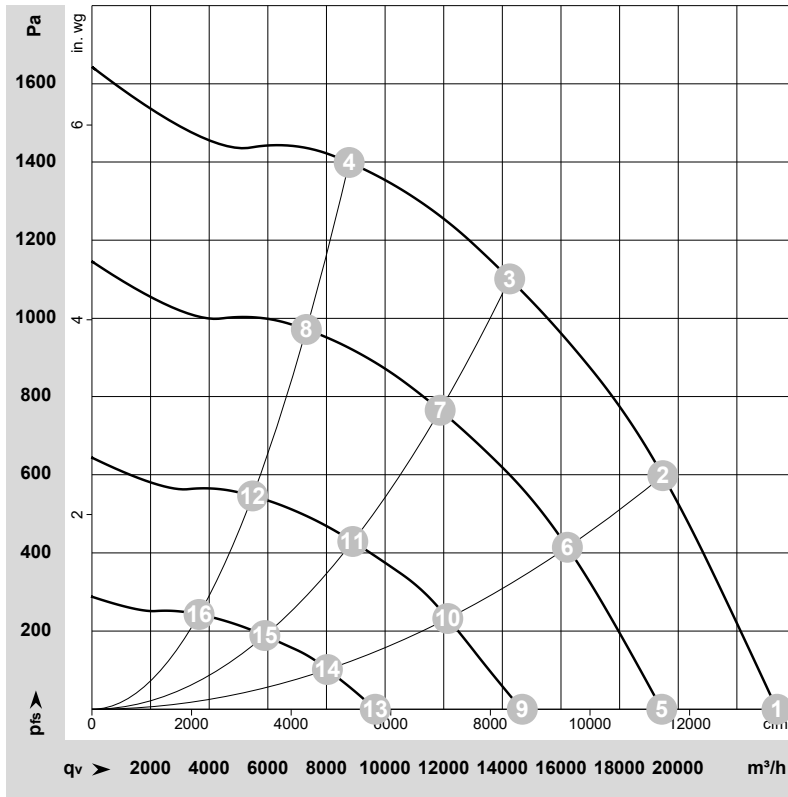
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Curves: Air performance 50 Hz



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

Measurement: LU-216705-1
Date: 2021-11-18
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}	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	1950	4449	6.96	95	102	103	23370	0	13755	0.00
2	3~	400	50	1950	5883	9.07	86	93	96	19475	600	11465	2.41
3	3~	400	50	1950	6400	9.80	78	86	90	14250	1100	8390	4.42
4	3~	400	50	1950	5884	9.07	81	89	94	8775	1400	5165	5.62
5	3~	400	50	1625	2657	4.36	86	93	96	19440	0	11440	0.00
6	3~	400	50	1620	3429	5.47	79	87	90	16220	416	9545	1.67
7	3~	400	50	1625	3697	5.86	73	81	85	11880	765	6990	3.07
8	3~	400	50	1625	3442	5.49	75	83	89	7315	973	4305	3.91
9	3~	400	50	1220	1238	2.42	76	84	87	14680	0	8640	0.00
10	3~	400	50	1215	1523	2.80	70	78	82	12140	233	7145	0.94
11	3~	400	50	1215	1642	2.96	66	73	77	8900	429	5235	1.72
12	3~	400	50	1215	1535	2.83	67	75	80	5480	546	3225	2.19
13	3~	400	50	810	436	1.18	65	73	77	9665	0	5690	0.00
14	3~	400	50	810	513	1.32	58	67	71	8030	102	4725	0.41
15	3~	400	50	810	550	1.39	55	62	66	5900	189	3470	0.76
16	3~	400	50	810	522	1.34	55	63	67	3655	243	2150	0.98

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