

8300100444  
VBS0450CSPKS

# EC centrifugal fan - RadiPac

backward-curved, single-intake

8300100444 ebmpapst Datasheet

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## Nominal data

Item	8300100444	
Motor	E08421-50	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min <sup>-1</sup>	1440
Power consumption	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
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 (EN 17166)

		Actual	Req. 2015			
01 Overall efficiency $\eta_{es}$	%	70.1	48.3	09 Power consumption $P_{ed}$	kW	0.49
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	4220
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	266
04 Efficiency grade N		83.8	62	10 Speed (rpm) n	min <sup>-1</sup>	1440
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-220378

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

Size	450 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP 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
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	<ul style="list-style-type: none"><li>- Output 10 VDC, max. 10 mA</li><li>- Operation and alarm display</li><li>- Alarm relay</li><li>- Integrated PID controller</li><li>- Power limiter</li><li>- Motor current limitation</li><li>- PFC, active</li><li>- RS-485 MODBUS-RTU</li><li>- Soft start</li><li>- Control input 0-10 VDC / PWM</li><li>- Control interface with SELV potential safely disconnected from the mains</li><li>- Thermal overload protection for electronics/motor</li><li>- Line undervoltage / phase failure detection</li></ul>
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Lateral
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; UKCA
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

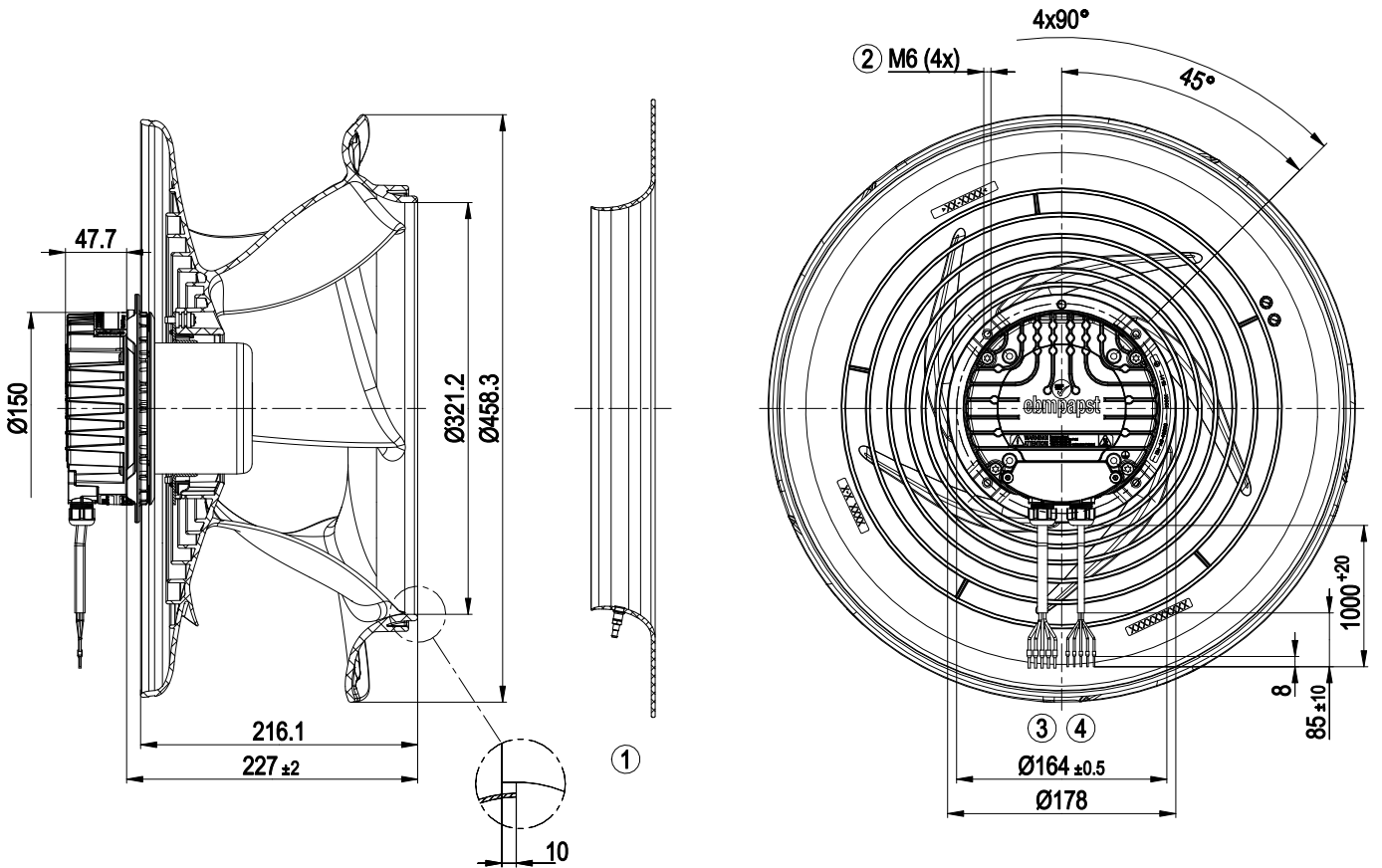


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## Product drawing



1	Accessory part: Inlet ring 8217102239 with pressure tap (k-factor: 232) (not included in scope of delivery)
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18 5x wire-end ferrule
4	Cable PVC AWG22 5x wire-end ferrule

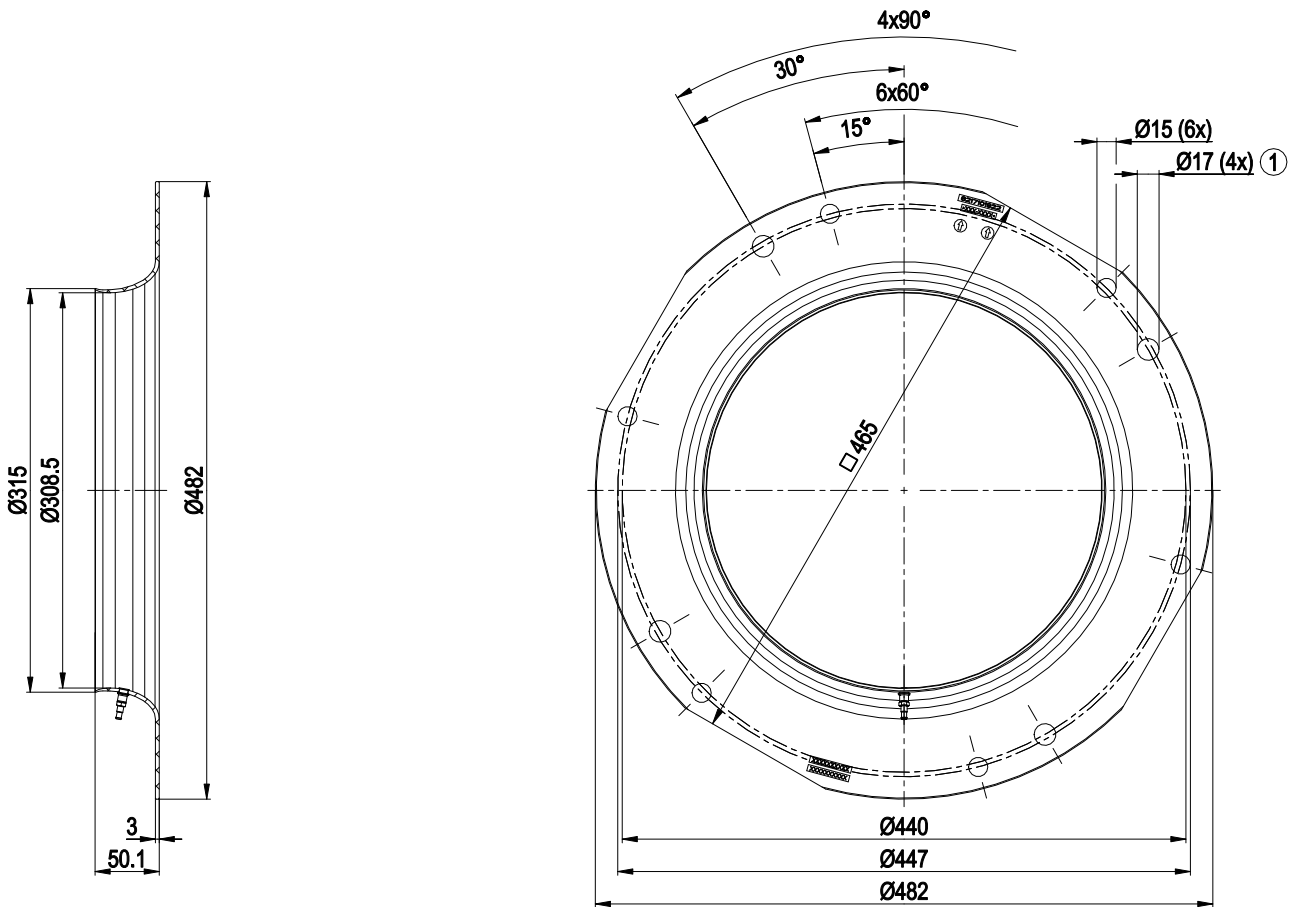


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## Accessory part

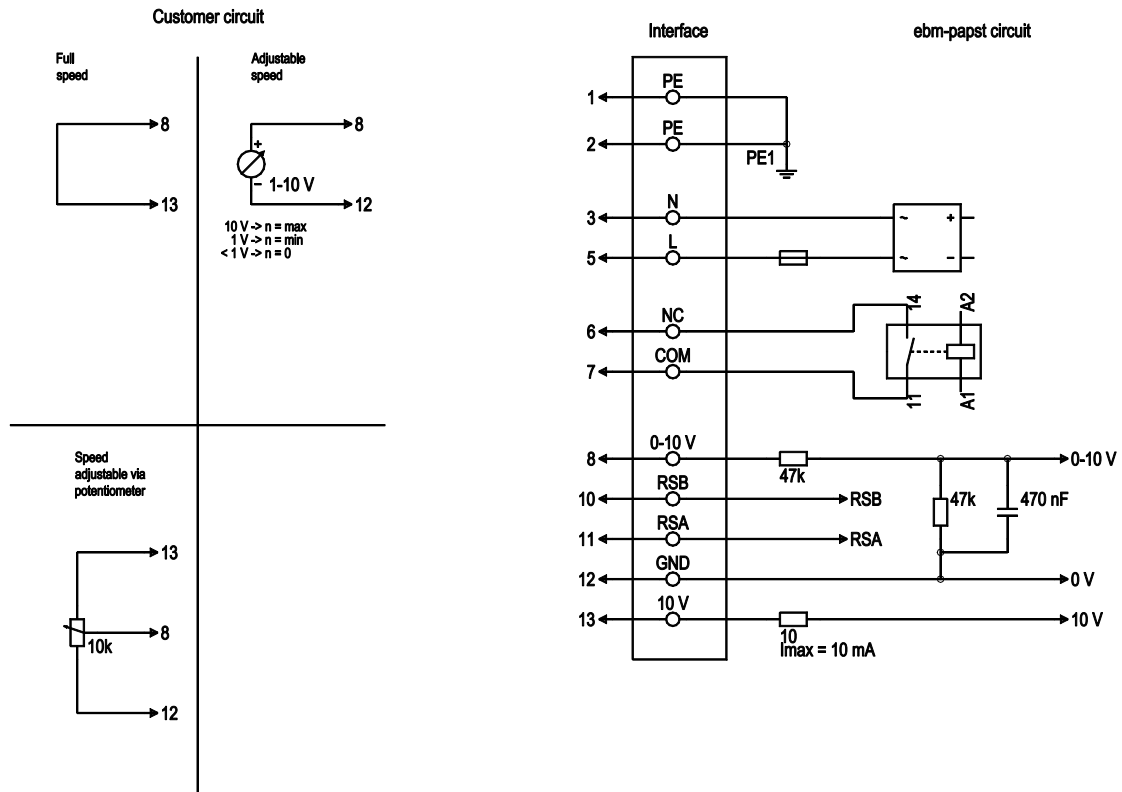


Inlet ring 8217102239 with pressure tap (k-factor: 232)

- 1 Fastening holes for FlowGrid 35505-2-2957 (not included in scope of delivery) are provided and must be subsequently opened as required

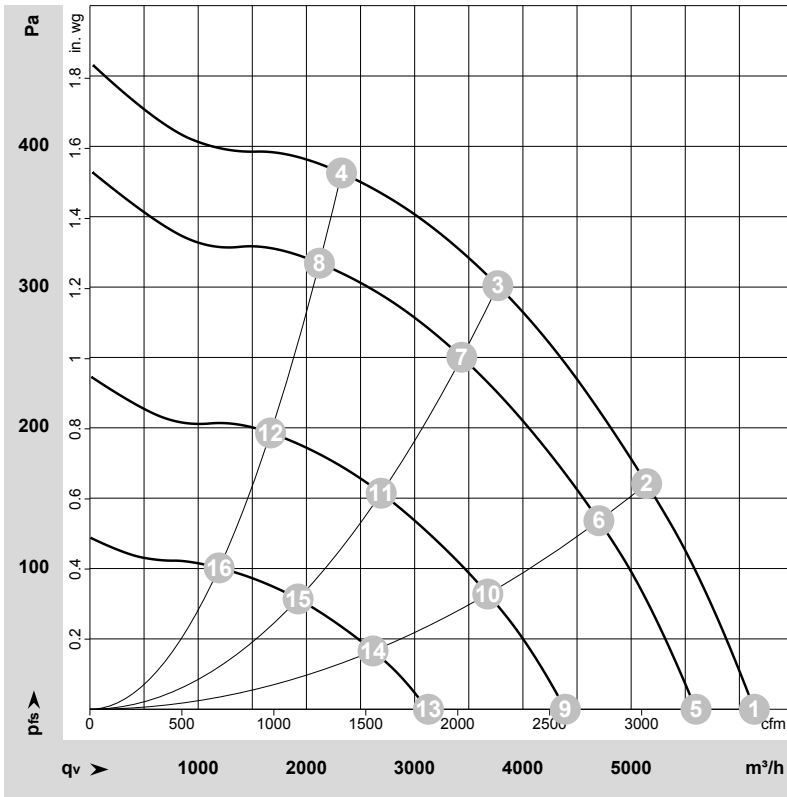


## Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact; common connection, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
2	8	0-10V	yellow	Analog input (set value); 0-10 V; $R_i = 100\text{ k}\Omega$ ; adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB
2	11	RSA	white	RS485 interface for MODBUS, RSA
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V $\pm 3\%$ ; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. pot)

## Curves: Air performance 50 Hz



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

Measurement: LU-220378-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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 <sub>e</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	LwA <sub>out</sub>	LwA	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
		V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	dB(A)	dB	m <sup>3</sup> /h	Pa	cfm	in. wg
1	1~	230	50	1440	339	1.50	70	78	82	83	6140	0	3615	0.00
2	1~	230	50	1440	438	1.92	64	72	77	78	5145	160	3025	0.64
3	1~	230	50	1440	500	2.20	60	67	72	73	3770	300	2220	1.20
4	1~	230	50	1440	469	2.05	61	68	72	74	2325	380	1370	1.53
5	1~	230	50	1315	259	1.16	67	76	79	81	5600	0	3295	0.00
6	1~	230	50	1315	335	1.48	62	70	74	76	4700	135	2765	0.54
7	1~	230	50	1315	381	1.68	58	65	70	71	3435	250	2020	1.00
8	1~	230	50	1315	355	1.56	59	66	70	71	2120	317	1250	1.27
9	1~	230	50	1035	130	0.59	62	71	75	76	4390	0	2585	0.00
10	1~	230	50	1035	166	0.75	58	66	70	71	3675	82	2165	0.33
11	1~	230	50	1035	187	0.84	53	60	64	65	2690	154	1585	0.62
12	1~	230	50	1035	175	0.79	53	59	63	65	1670	196	980	0.79
13	1~	230	50	740	57	0.30	55	62	68	69	3125	0	1840	0.00
14	1~	230	50	740	68	0.35	48	56	63	64	2615	42	1540	0.17
15	1~	230	50	740	75	0.37	43	51	57	58	1925	78	1130	0.31
16	1~	230	50	740	72	0.36	43	50	55	56	1195	101	705	0.41

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

