

8300101715  
VBS0280SSNDS

# EC centrifugal fan - RadiCal

backward-curved, single-intake

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## Nominal data

Item	8300101715	
Motor	E07433-18	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min <sup>-1</sup>	2000
Power consumption	W	170
Current draw	A	1.4
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

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 $\eta_{es}$	%	70.7	43.3	09 Power consumption $P_{ed}$	kW	0.16
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	1630
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	229
04 Efficiency grade N		89.4	62	10 Speed (rpm) n	min <sup>-1</sup>	2035
05 Variable speed drive		Yes		11 Specific ratio <sup>*</sup>		1.00

Data obtained at optimum efficiency level.

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

LU-233570

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

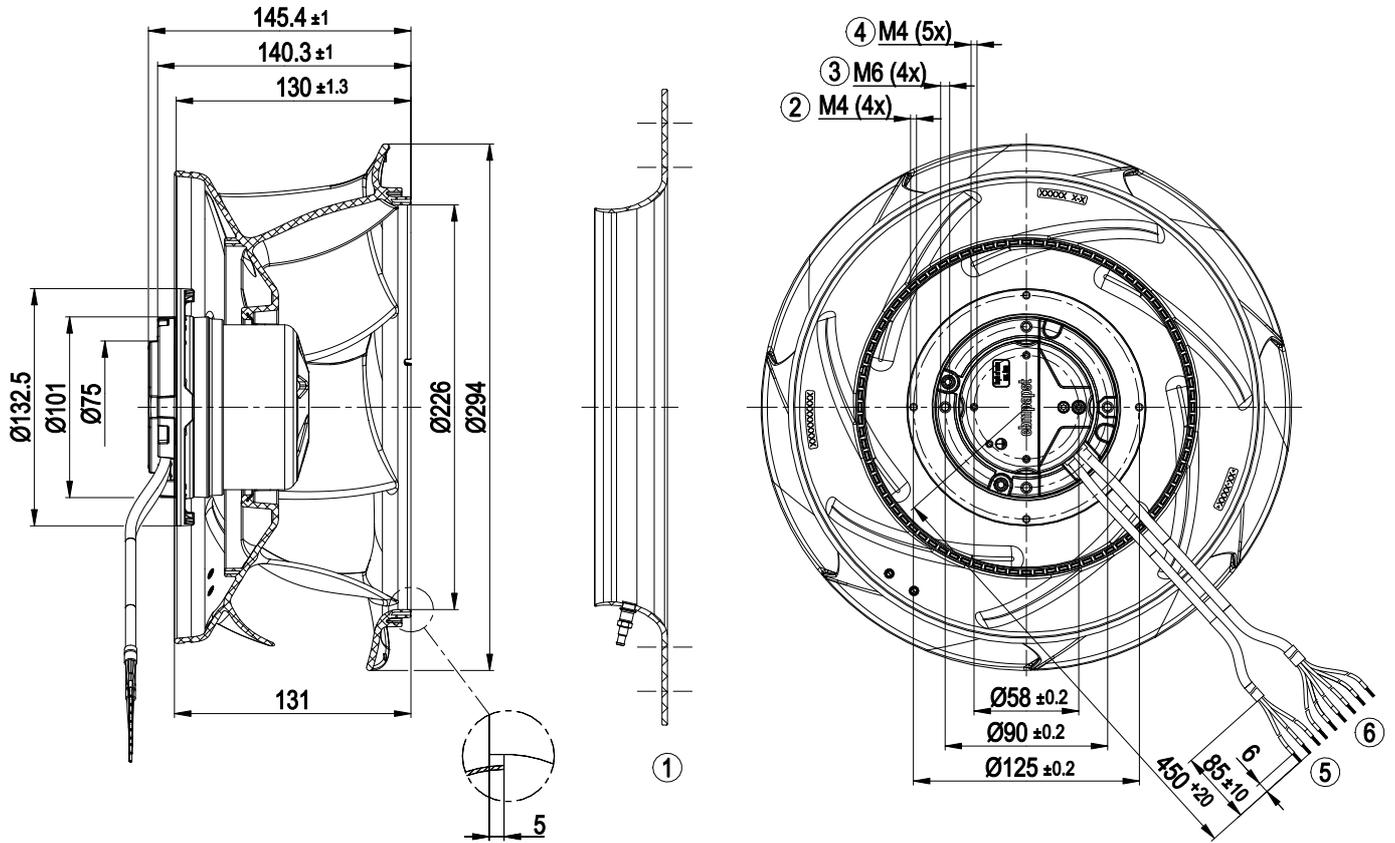
Size	280 mm
Motor size	74
Rotor surface	Galvanized
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H1
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Any
Condensation drainage holes	None, open rotor
Motor bearing	Ball bearing
Technical features	<ul style="list-style-type: none"><li>- Output 10 VDC, max. 10 mA</li><li>- Locked-rotor detection</li><li>- Tach output</li><li>- Speed control</li><li>- Power limiter</li><li>- Motor current limitation</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>- Overvoltage detection</li><li>- Thermal overload protection for electronics/motor</li><li>- Line undervoltage detection</li></ul>
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Electronic motor protection
With cable	Lateral
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 60335-1; EN 60034-1; EN 60204-1; CE; UKCA
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

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## Product drawing



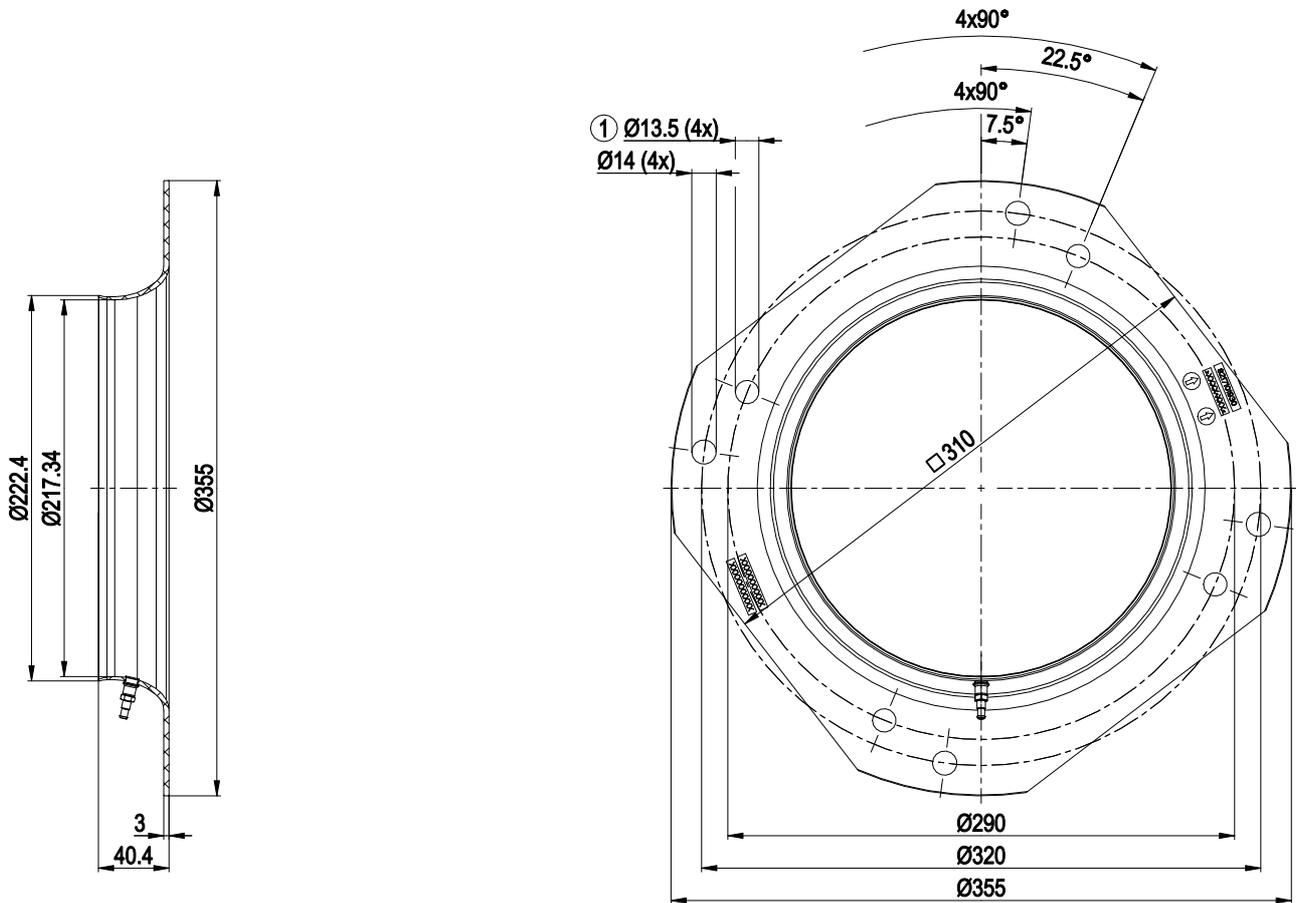
1	Inlet ring 8217102242 with pressure tap (k-factor: 115)
2	Max. clearance for screw 10 mm
3	Max. clearance for screw 10 mm
4	Max. clearance for screw 5 mm
5	Supply line (PWR) PVC AWG20 3x splice
6	Control wire (CTRL) PVC AWG22 6x splice

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## Accessory part

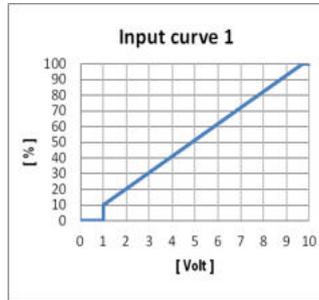


- |   |  |
|---|--|
| 1 | Fastening holes for FlowGrid 25310-2-2957 (not included in scope of delivery) are provided and must be subsequently opened as required |
|   | Inlet ring 8217102242 with pressure tap (k-factor: 115)  |

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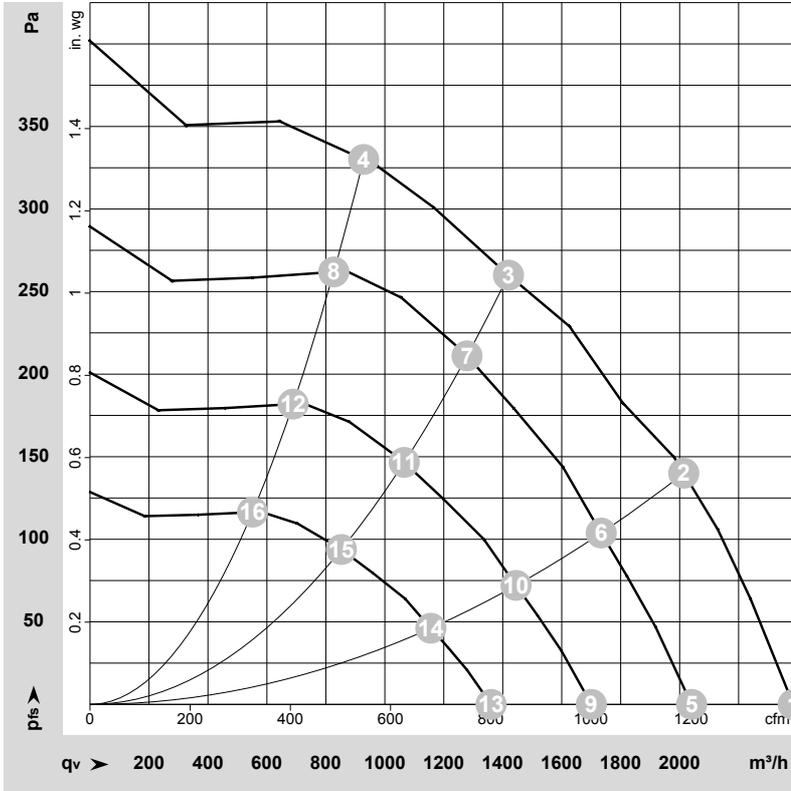
## Connection diagram



No.	Conn.	Designation	Color	Function/assignment
	PWR	L	black	Power supply, phase, see nameplate for voltage range
	PWR	N	blue	Power supply, neutral conductor, see nameplate for voltage range
	PWR	PE	green/yellow	Protective earth
	CTRL	GND	blue	Reference ground for control interface, SELV
	CTRL	IO1	yellow	Factory setting: Analog input 0-10 V/PWM, Ri=100 KΩ, fPWM=1 kHz..10 kHz, Function: Speed 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, Umax=50 VDC, Imax= 10 mA, function: Tach output 1 pulse/revolution, SELV Function parameterizable at factory (see table Optional interface functions)
	CTRL	Vout	red	Voltage output 10 VDC +/-3%, Imax=10 mA Short-circuit-proof, power supply for external devices, SELV
	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



## Curves: Air performance 50 Hz



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

Measurement: LU-233570-1  
Date: 2024-09-09  
Nozzle: 8217101930

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>	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)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	1~	230	50	2105	111	0.94	67	74	2385	0	1405	0.00
2	1~	230	50	2090	164	1.36	62	69	2015	140	1185	0.56
3	1~	230	50	2000	167	1.38	56	63	1420	260	835	1.04
4	1~	230	50	2020	167	1.38	60	68	930	330	545	1.32
5	1~	230	50	1800	69	0.59	63	70	2040	0	1200	0.00
6	1~	230	50	1800	105	0.87	58	66	1735	104	1020	0.42
7	1~	230	50	1800	122	1.01	53	61	1280	211	755	0.85
8	1~	230	50	1800	118	0.98	57	65	825	262	485	1.05
9	1~	230	50	1500	40	0.34	59	66	1700	0	1000	0.00
10	1~	230	50	1500	61	0.50	54	61	1445	72	850	0.29
11	1~	230	50	1500	71	0.59	49	56	1065	147	625	0.59
12	1~	230	50	1500	68	0.57	52	60	690	182	405	0.73
13	1~	230	50	1200	21	0.17	53	60	1360	0	800	0.00
14	1~	230	50	1200	31	0.26	48	55	1155	46	680	0.18
15	1~	230	50	1200	36	0.30	43	51	855	94	500	0.38
16	1~	230	50	1200	35	0.29	47	55	550	116	325	0.47

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  
q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase