8300101769

VBS0280CSNJS

EC centrifugal fan - RadiPac

backward-curved, single-intake

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Item	**8300101769**
Motor	**E07434-43**

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^{-1}	3200
Power consumption	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
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}	%	71.8	48.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		85.4	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.5
09 Air flow q_v	m^3/h	2145
09 Pressure increase p_{fs}	Pa	555
10 Speed (rpm) n	min^{-1}	3175
11 Specific ratio*		1.01

Data obtained at optimum efficiency level.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-233280

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).

Technical description

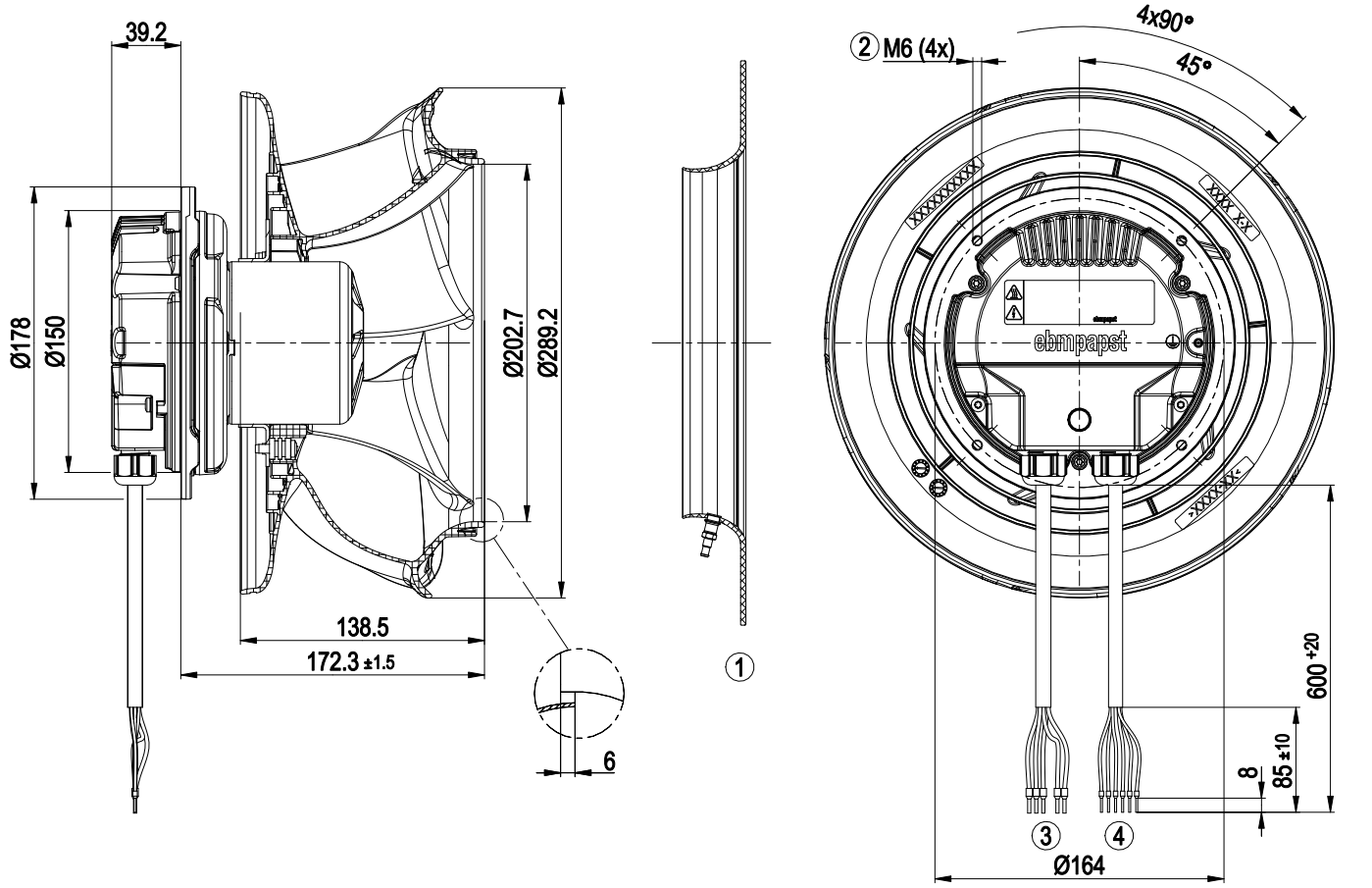
Size	280 mm
Motor size	74
Rotor surface	Galvanized
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H1
Max. 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
Mode	S1
Motor bearing	Ball bearing
Technical features	- Locked-rotor detection - Speed control - Alarm relay - Power limiter - Motor current limitation - PFC, active - 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
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 61800-5-1; CE; UKCA

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Product drawing



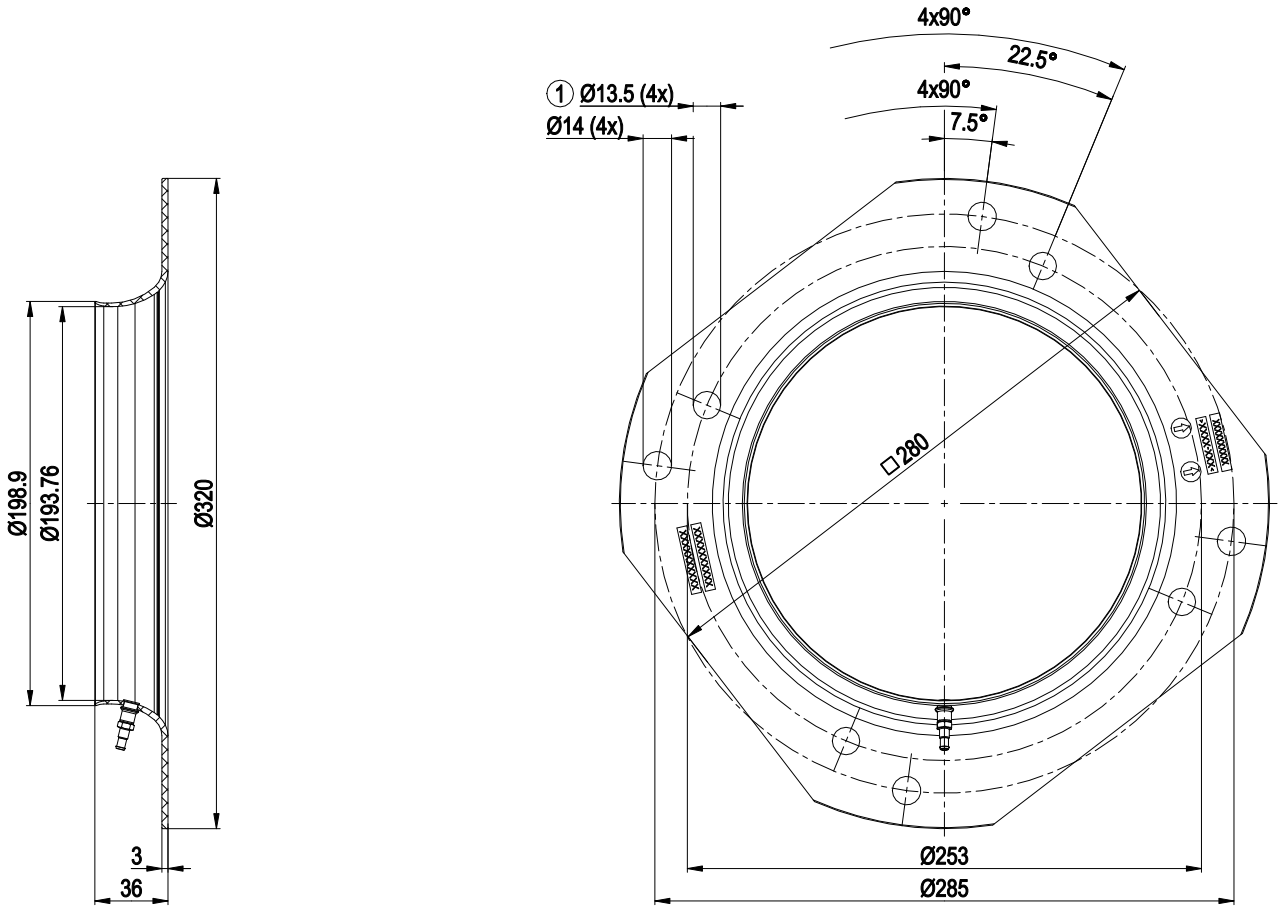
1	Accessory part: Inlet ring 8217104581 with pressure tap (k-factor: 98) (not included in scope of delivery)
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18 (PWR)
	5x wire-end ferrule
4	Cable PVC AWG22 (CTRL)
	6x wire-end ferrule

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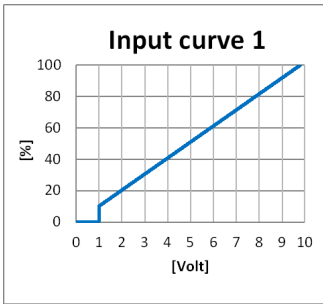
Accessory part



	Inlet ring 8217104581 with pressure tap (k-factor: 98)
1	Fastening holes for FlowGrid 20280-2-2957 (not included in scope of delivery) are provided and must be subsequently opened as required

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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
	PWR	PE	green/yellow	Protective earth
	PWR	L	black	Power supply, phase, see nameplate for voltage range
	PWR	N	blue	Power supply, neutral conductor, 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%, Imax=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, Ri=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, Umax=50 VDC, Imax=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

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Terminal/plug assignment

Medium (M2)

Functions and parameter description
MODBUS V7.1

○ *configurable function*
(○) *function to be activated via IO Mode*

configurable IO functions: normal / inverse

	configurable IO mode	electrical specification	MODBUS Register for IO mode configuration	INPUT: D101 [...] source: set value	INPUT: D147 [...] source: sensor value	INPUT: D104 [...] switch: parameter set: #1 / #2	INPUT: D12E [...] switch: control function: heating (pos.) /cooling (neg.)	INPUT: D148 [...] switch: direction of rotation: cw / ccw	INPUT: D16C [...] switch: set value source	INPUT: D16A [...] switch: fan enable / disable	INPUT: D00C [1] source: input pulses autoaddressing	INPUT: D638 [...] source: DCI in	OUTPUT: selection direct via IO signal: tach out	OUTPUT: selection direct via IO signal: diagnostics out	OUTPUT: selection direct via IO signal: alarm out	OUTPUT: D130 [4] signal: output pulses autoaddressing	OUTPUT: D61B signal: DCI out	OUTPUT: D130 [0] signal: fan modulation level %	OUTPUT: D130 [1] signal: actual speed 1/min	OUTPUT: D130 [2] signal: system modulation level %	OUTPUT: D130 [5] signal: remote control output 0-10 V	OUTPUT: D145 signal: run monitoring	OUTPUT: signal: status
IO1	○ **Din1 (high active):** digital input	active: applied voltage 3.5 - 50 VDC not active: pin open or applied voltage < 1.5 VDC, SELV	D158 [0]			○	○	○	○	○	○	○											
IO1	○ **Din1 (low active):** digital input	active: applied voltage < 1.5 VDC not active: pin open or applied voltage 3.5 - 50 VDC, SELV	D158 [1]			○	○	○	○	○	○	○											
IO1	○ **Ain1 0-10 V/PWM:** analog input	Ri = 100 kΩ, characteristic curve parametrizable, f_{PWM} = 1 k - 10 kHz, SELV	D158 [2]	○	○																		
IO1	○ **Ain1 0-10 V/PWM (with pull up):** analog input	Ri = 100 kΩ, characteristic curve parametrizable, f_{PWM} = 1 k - 10 kHz, SELV	D158 [9]	○	○																		
IO2	○ **Din1 (active high):** digital input	active: applied voltage 3.5 - 50 VDC not active: pin open or applied voltage < 1.5 VDC, SELV	D159 [0]			○	○	○	○	○													
IO2	○ **Ain1 0-10 V/PWM:** analog input	Ri = 100 kΩ, characteristic curve parametrizable, f_{PWM} = 1 k - 10 kHz, SELV	D159 [2]	○	○																		
IO2	○ **Tach out** (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV	D159 [5]										(○)										
IO2	○ **Diagnostics out** (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV	D159 [6]											(○)									
IO2	○ **Alarm out** (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV	D159 [10]												(○)								
IO2	○ **Autoadressing pulse output** (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV	D159 [11]													(○)							
IO2	○ **DCI-output** (open collector)	Umax = 50 VDC, Imax = 20 mA, SELV	D159 [12]														(○)						
RSA RSB	**RS485 bus connection**	MODBUS RTU, parameter specification V7.1, SELV		○		○	○	○	○	○													
COM NC	**Relay**	250 VAC / 2 A (AC1)																				○	○
Vout	**Voltage output**	Voltage 10 VDC, SELV																					
Vout	**Alternatively:** Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage	15 - 30 VDC																					

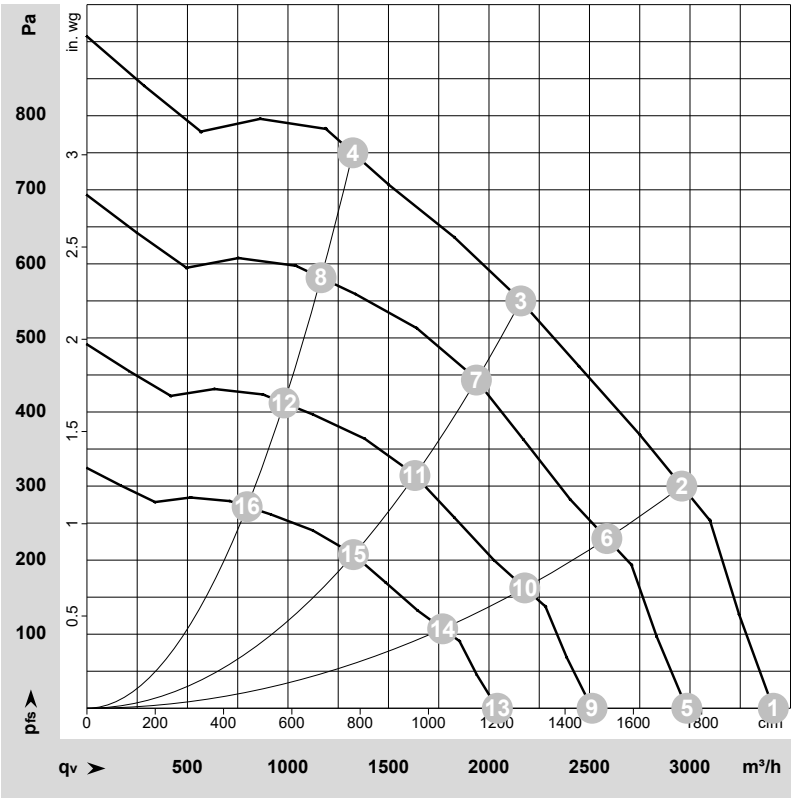
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-233280-1
Date: 2024-09-18
Nozzle: 8217102502

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}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	1~	230	50	3260	381	1.68	75	83	3415	0	2010	0.00
2	1~	230	50	3260	491	2.16	69	76	2960	300	1740	1.20
3	1~	230	50	3175	508	2.23	64	72	2160	550	1270	2.21
4	1~	230	50	3235	502	2.20	69	77	1325	750	780	3.01
5	1~	230	50	2850	254	1.12	72	80	2985	0	1755	0.00
6	1~	230	50	2850	328	1.44	65	73	2585	229	1520	0.92
7	1~	230	50	2850	367	1.61	61	69	1935	443	1140	1.78
8	1~	230	50	2850	343	1.51	66	73	1165	581	685	2.33
9	1~	230	50	2400	152	0.67	68	75	2515	0	1480	0.00
10	1~	230	50	2400	196	0.86	61	68	2180	162	1280	0.65
11	1~	230	50	2400	219	0.96	57	65	1630	314	960	1.26
12	1~	230	50	2400	205	0.90	62	69	980	412	575	1.65
13	1~	230	50	1950	81	0.36	62	70	2040	0	1200	0.00
14	1~	230	50	1950	105	0.46	56	63	1770	107	1040	0.43
15	1~	230	50	1950	118	0.52	52	59	1325	207	780	0.83
16	1~	230	50	1950	110	0.48	56	64	795	272	470	1.09

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
q_V = Air flow · p_{fs} = Pressure increase

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