EC centrifugal fan

backward curved, single inlet

R3G280-AK54-21 ebmpapst Datasheet
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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G280-AK54-21**	
Motor	**M3G112-EA**	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
Speed	min^{-1}	2800
Power input	W	600
Current draw	A	1.3
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	50

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data according to ErP directive

Installation category	A
Efficiency category	Static
Variable speed drive	Yes
Specific ratio*	1.01

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

		Actual	Request 2013	Request 2015
Overall efficiency η_{es}	%	52.8	47.6	51.6
Efficiency grade N		63.2	58	62
Power input P_{ed}	kW	1.02		
Air flow q_v	m^3/h	1790		
Pressure increase p_{fs}	Pa	1003		
Speed n	min^{-1}	3420		

Data definition with optimum efficiency. LU-114283
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

Mass	7.8 kg
Size	280 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Aluminium sheet
Number of blades	6
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"B"
Humidity class	F4-1
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensate discharge holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Integrated PID controller - Motor current limit - PFC, passive - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Variable
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE

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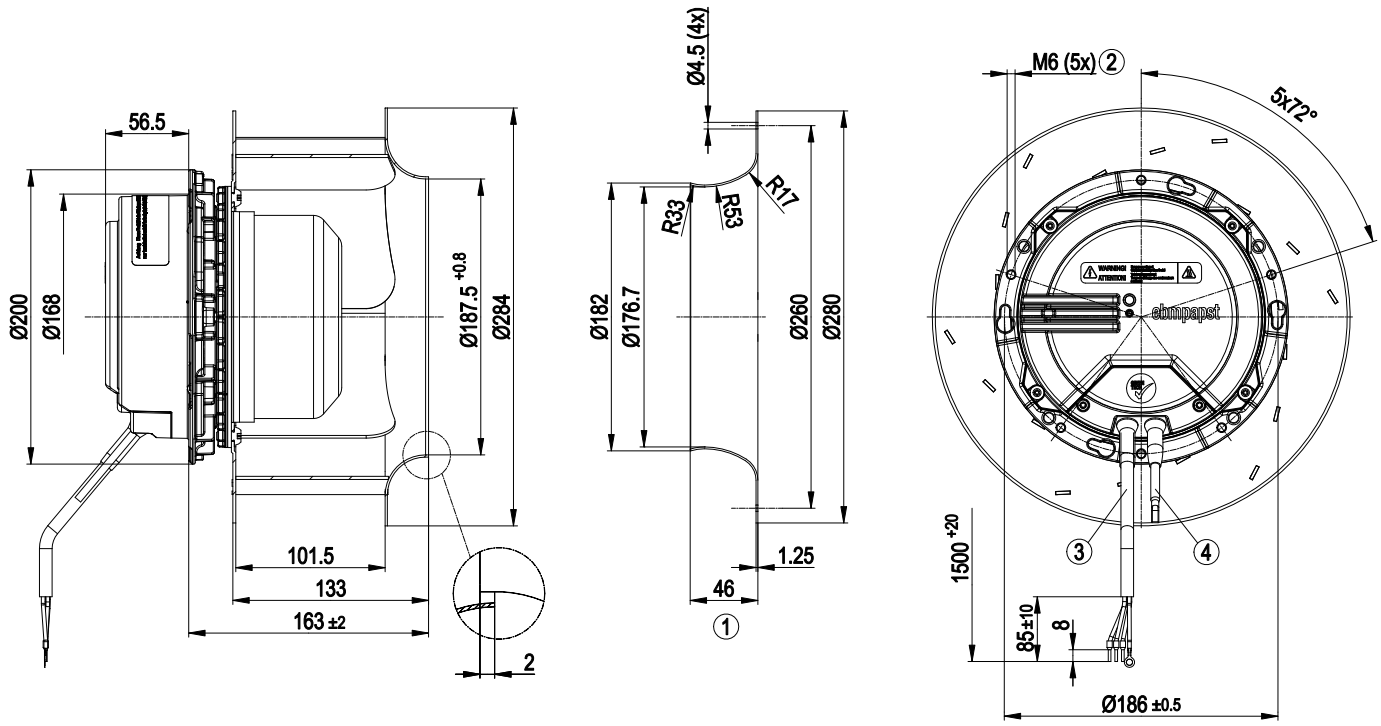
Product drawing



1	Accessory part: Inlet nozzle 28000-2-4013 not included in scope of delivery
2	Thread reach max. 16 mm
3	Connection line silicone 4G 1.0 mm², 3x core-end sleeves and 1x contact stud dia. 4.3 crimped
4	Connection line PVC AWG22 insulated with heat shrink tube

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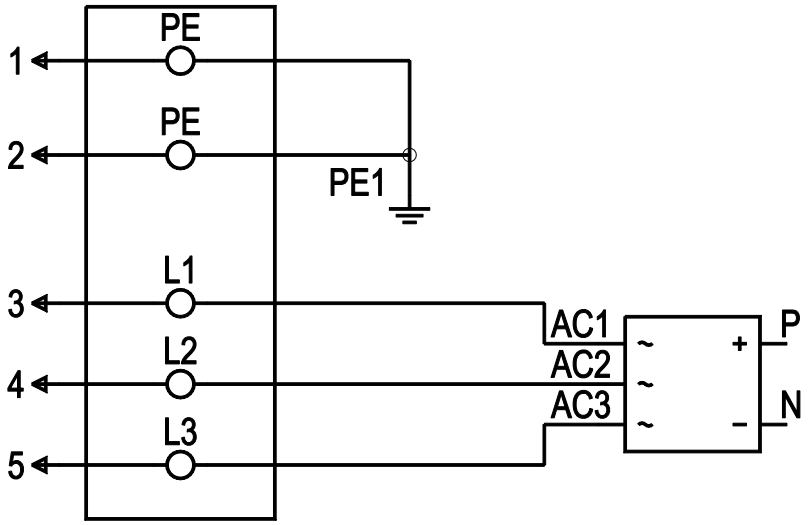
Connection screen

Customer circuit | Interface | ebm-papst circuit



No.	Conn.	Designation	Colour	Function / assignment
1	1, 2	PE		Protective earth
1	3	L1	black	Mains connection, power supply 3~ 380-480 VAC, 50/60 Hz
1	4	L2	brown	Mains connection, power supply 3~ 380-480 VAC, 50/60 Hz
1	5	L3	blue	Mains connection, power supply 3~ 380-480 VAC, 50/60 Hz

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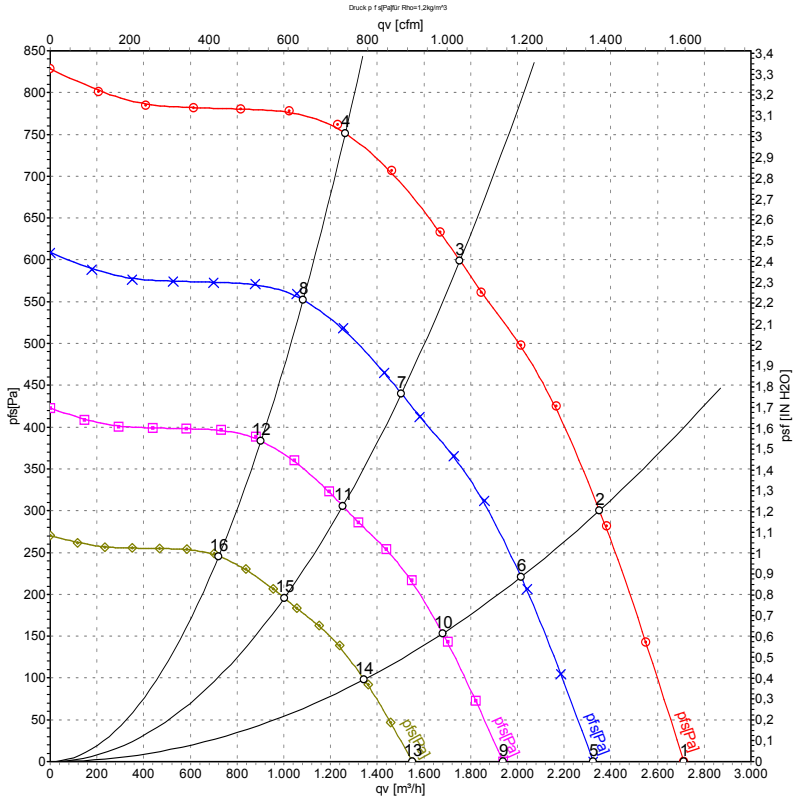
Charts: Air flow 50 Hz



Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	U	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa
1	400	50	2800	446	0.79	80	87	2715	0
2	400	50	2800	541	0.94	76	83	2350	300
3	400	50	2800	600	1.30	73	81	1755	600
4	400	50	2800	538	0.92	72	80	1265	750
5	400	50	2400	281	0.50	76	83	2325	0
6	400	50	2400	341	0.59	73	80	2015	222
7	400	50	2400	363	0.61	70	78	1505	440
8	400	50	2400	338	0.58	69	76	1085	554
9	400	50	2000	163	0.29	72	79	1940	0
10	400	50	2000	197	0.34	69	76	1680	154
11	400	50	2000	210	0.35	66	74	1255	306
12	400	50	2000	196	0.34	65	72	900	384
13	400	50	1600	83	0.15	67	75	1550	0
14	400	50	1600	101	0.18	64	71	1345	99
15	400	50	1600	107	0.18	61	69	1000	196
16	400	50	1600	100	0.17	60	67	720	246

U = Supply voltage · f = Frequency · n = Speed · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · qv = Air flow
p_{fs} = Pressure increase