R3G280-AK54-21

EC centrifugal fan

backward-curved, single-intake

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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
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2800
Power consumption	W	600
Current draw	A	1.3
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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	52.8	51.6
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		63.2	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.02
09 Air flow q_v	m^3/h	1790
09 Pressure increase p_{fs}	Pa	1003
10 Speed (rpm) n	min^{-1}	3420
11 Specific ratio*		1.01

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

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

LU-114283

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Technical description

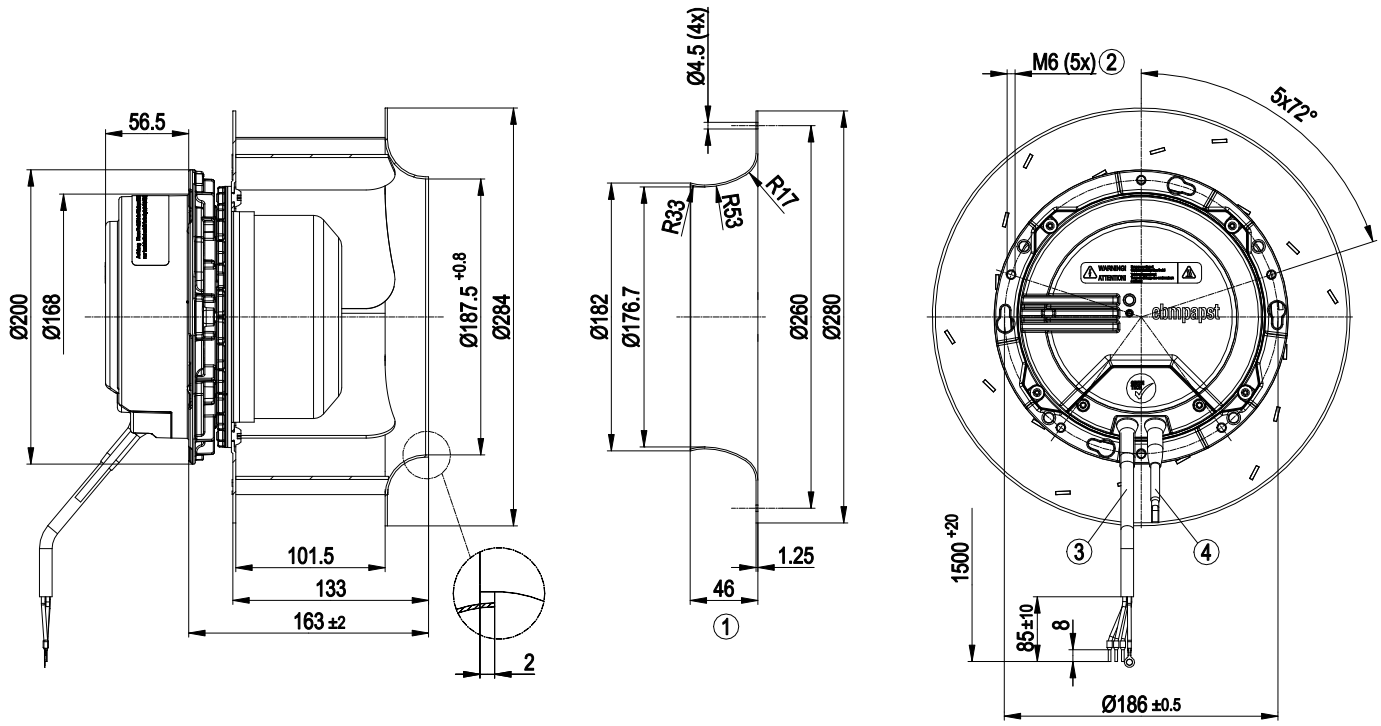
Weight	7.8 kg
Fan size	280 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F4-1
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	- Integrated PID controller - Motor current limitation - PFC, passive - Soft start - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC circuit feedback	According to EN 61000-3-2/3
EMC interference emission	According to EN 61000-6-4 (industrial environment)
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	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE

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Product drawing



1	Accessory part: inlet ring 28000-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable silicone 4G 1.0 mm², 3x wire-end ferrules and 1x ring terminal Ø 4.3 crimped
4	Cable PVC AWG22 insulated with heat shrink tube

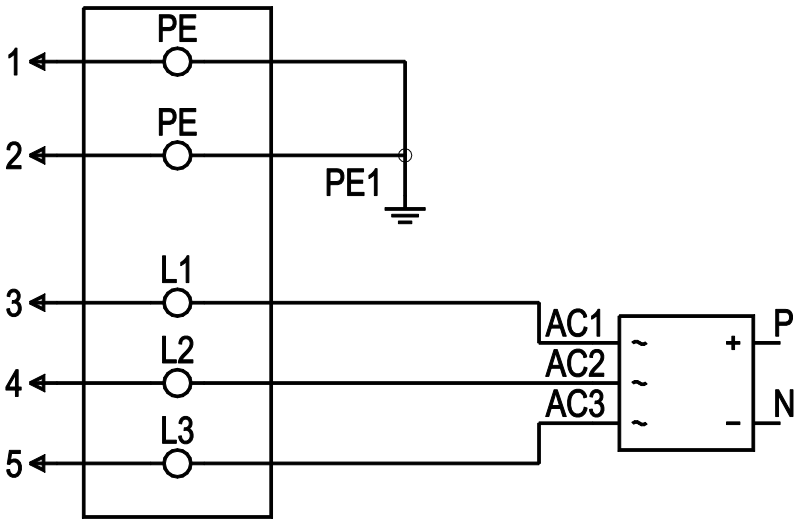
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Connection diagram

Customer circuit | Interface | ebm-papst circuit



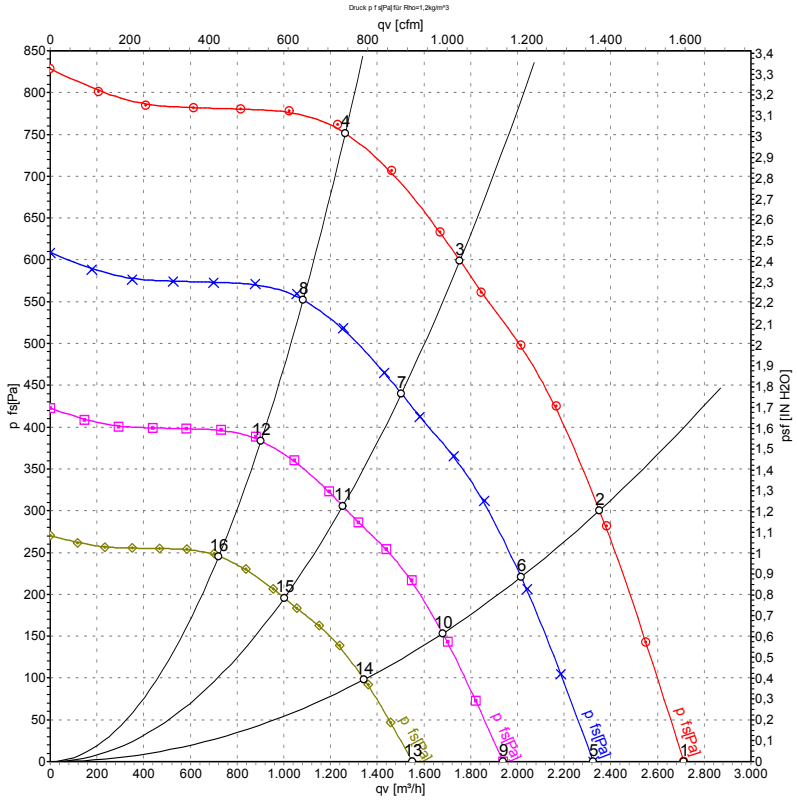
No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	L1	black	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	4	L2	brown	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	5	L3	blue	Supply connection, power supply 3-phase 380-480 VAC,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

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Curves: Air performance 50 Hz



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

	U	f	n	P_{ed}	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	inH2O
1	400	50	2800	446	0.79	80	87	2715	0	1595	0.00
2	400	50	2800	541	0.94	76	83	2350	300	1385	1.20
3	400	50	2800	600	1.30	73	81	1755	600	1030	2.41
4	400	50	2800	538	0.92	72	80	1265	750	745	3.01
5	400	50	2400	281	0.50	76	83	2325	0	1370	0.00
6	400	50	2400	341	0.59	73	80	2015	222	1185	0.89
7	400	50	2400	363	0.61	70	78	1505	440	885	1.77
8	400	50	2400	338	0.58	69	76	1085	554	635	2.22
9	400	50	2000	163	0.29	72	79	1940	0	1140	0.00
10	400	50	2000	197	0.34	69	76	1680	154	990	0.62
11	400	50	2000	210	0.35	66	74	1255	306	735	1.23
12	400	50	2000	196	0.34	65	72	900	384	530	1.54
13	400	50	1600	83	0.15	67	75	1550	0	910	0.00
14	400	50	1600	101	0.18	64	71	1345	99	790	0.40
15	400	50	1600	107	0.18	61	69	1000	196	590	0.79
16	400	50	1600	100	0.17	60	67	720	246	425	0.99

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = 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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