

R3G280-PS10-J5 ebmpapst Datasheet

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Nominal data

Type	R3G280-PS10-J5	
Motor	M3G084-FA	
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	3400
Power consumption	W	1050
Current draw	A	1.6
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	45

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}	%	67.1	51.6	09 Power consumption P_{ed}	kW	1.02
02 Measurement category		A		09 Air flow q_v	m ³ /h	2810
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	808
04 Efficiency grade N		77.5	62	10 Speed (rpm) n	min ⁻¹	3390
05 Variable speed drive		Yes		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 = $1 + p_{fs} / 100\,000\text{ Pa}$

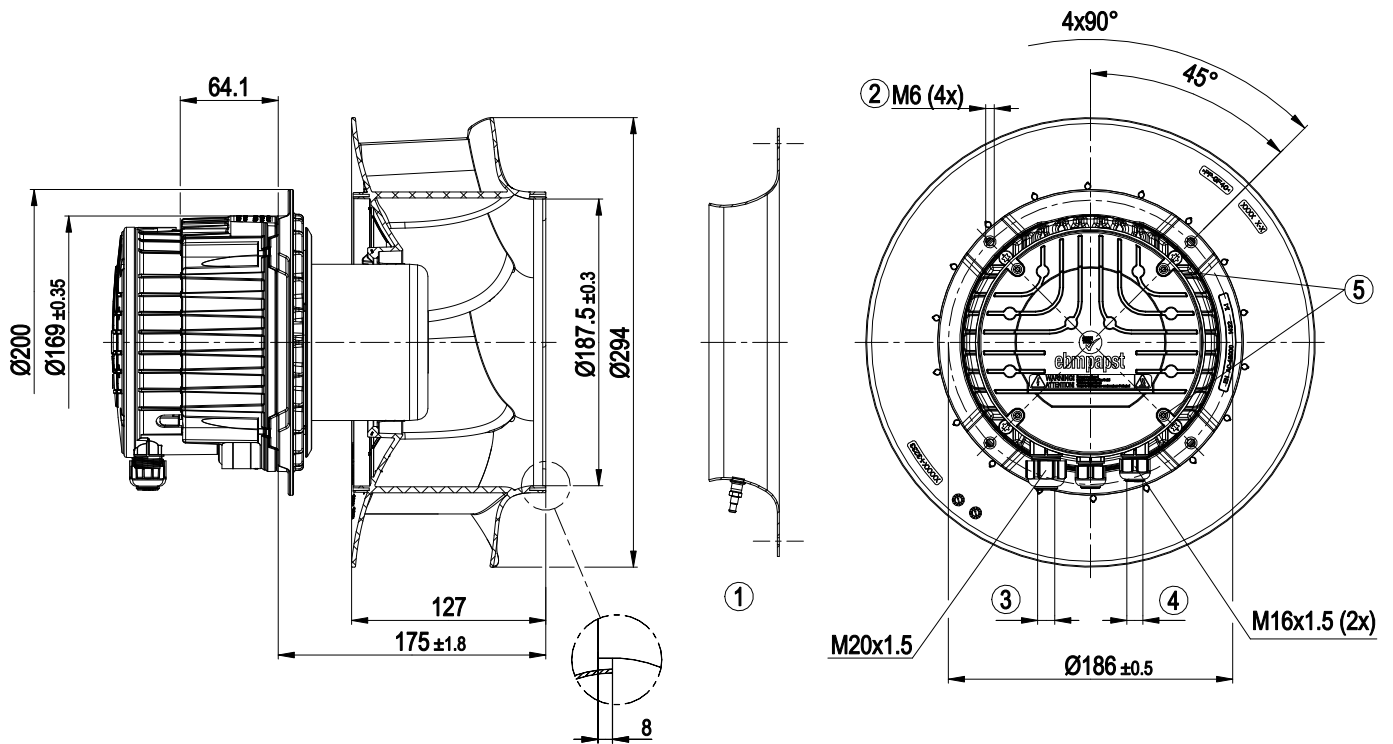
LU-174002



Technical description

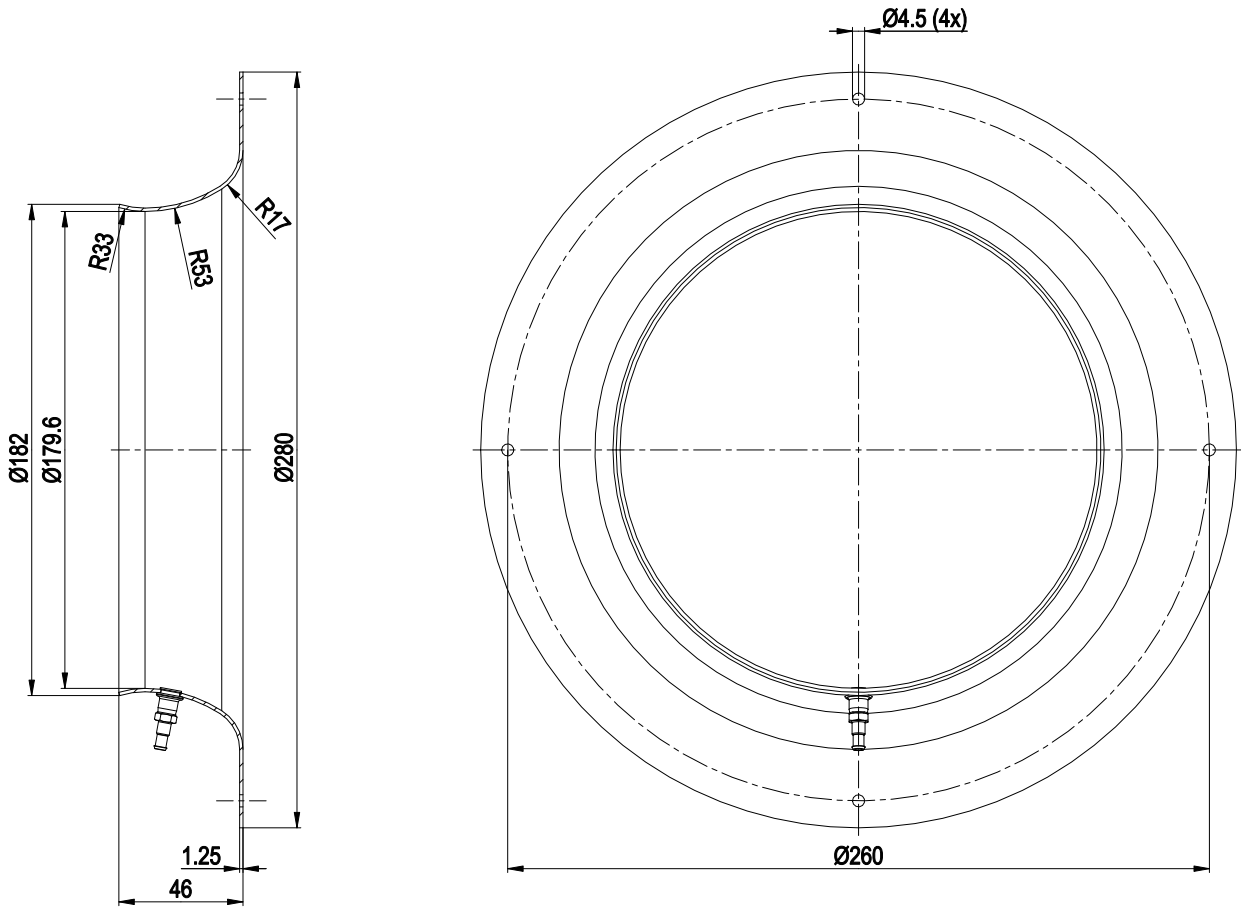
Weight	5.3 kg
Fan size	280 mm
Rotor surface	Painted black
Impeller material	PP plastic
Housing material	Die-cast aluminum
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at temperatures below -25°C (e.g. refrigeration applications) we recommend our fan design with special low-temperature bearings.
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"> - Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Via terminal box
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (if protective earth is connected by customer to the housing's connection point)
Conformity with standards	EN 61800-5-1; CE
Approval	C22.2 No.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

Product drawing



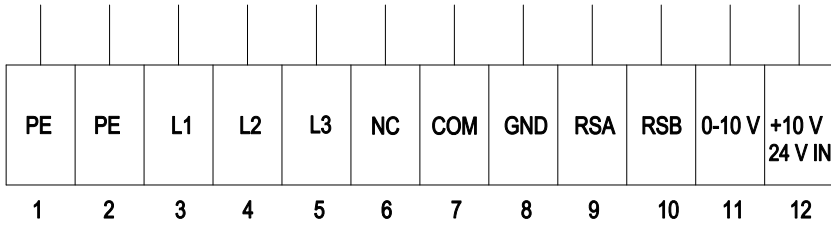
1	Accessory part: inlet ring 28004-2-4013 with pressure tap (k-factor: 77) not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable diameter min. 8 mm, max. 12 mm, tightening torque 2.5 ± 0.4 Nm
4	Cable diameter min. 6 mm, max. 10 mm, tightening torque 2.5 ± 0.4 Nm Cable diameter min. 4 mm, max. 7 mm, tightening torque 2.5 ± 0.4 Nm (included seal must be used)

Accessory part



inlet ring 28004-2-4013 with pressure tap (k-factor: 77)

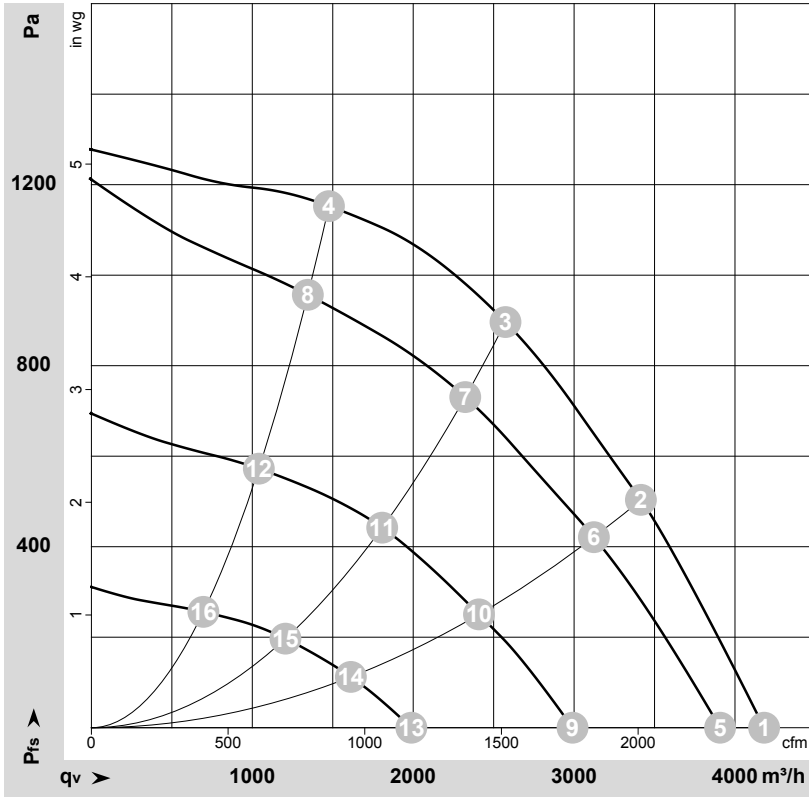
Connection diagram



No.	Conn.	Designation	Function/assignment
1	PE	PE	Protective earth
2	PE	PE	Protective earth
3	L1	L1	Power supply
4	L2	L2	Power supply
5	L3	L3	Power supply
6	NC	NC	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; reinforced insulation on supply side and basic insulation on control interface side
7	COM	COM	Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; reinforced insulation on supply side and basic insulation on control interface side
8	GND	GND	Reference ground for control interface, SELV
9	RSA	RSA	RS485 interface for MODBUS, RSA; SELV
10	RSB	RSB	RS485 interface for MODBUS, RSB; SELV
11	0-10 V	0-10 V	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
12	+10 V	+10 V	Fixed voltage output 10 VDC, SELV, +10 V ±3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); fixed voltage input 24 VDC for setting parameters via MODBUS without line voltage supply



Curves: Air performance 50 Hz



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

Measurement: LU-174002-1

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

	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	inH ₂ O
1	400	50	3400	743	1.17	81	88	4180	0	2460	0.00
2	400	50	3400	963	1.49	75	83	3415	500	2010	2.01
3	400	50	3400	1050	1.60	72	80	2575	900	1515	3.61
4	400	50	3400	926	1.43	76	85	1475	1150	870	4.62
5	400	50	3185	624	0.99	79	86	3905	0	2300	0.00
6	400	50	3110	717	1.12	73	80	3125	423	1840	1.70
7	400	50	3060	779	1.21	69	77	2325	732	1370	2.94
8	400	50	3110	710	1.11	74	81	1345	957	790	3.84
9	400	50	2445	295	0.54	72	79	2990	0	1760	0.00
10	400	50	2400	351	0.61	65	73	2410	251	1420	1.01
11	400	50	2380	384	0.65	61	68	1805	446	1065	1.79
12	400	50	2410	345	0.60	68	75	1040	572	615	2.30
13	400	50	1635	107	0.29	62	70	1990	0	1170	0.00
14	400	50	1615	125	0.31	56	63	1615	113	950	0.45
15	400	50	1605	134	0.33	52	59	1205	198	710	0.79
16	400	50	1615	123	0.31	55	63	695	256	410	1.03

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

