EC centrifugal fan - RadiPac

backward-curved, single-intake

R3G280-PR04-J9 ebmpapst Datasheet
sales@fansco.com
www.fansco.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**R3G280-PR04-J9**
Motor	**M3G084-DF**

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	1075
Current draw	A	1.7
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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	65.8	51.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		76	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.06
09 Air flow q_v	m^3/h	2710
09 Pressure increase p_{fs}	Pa	865
10 Speed (rpm) n	min^{-1}	3405
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-176661

EC centrifugal fan - RadiPac

backward-curved, single-intake

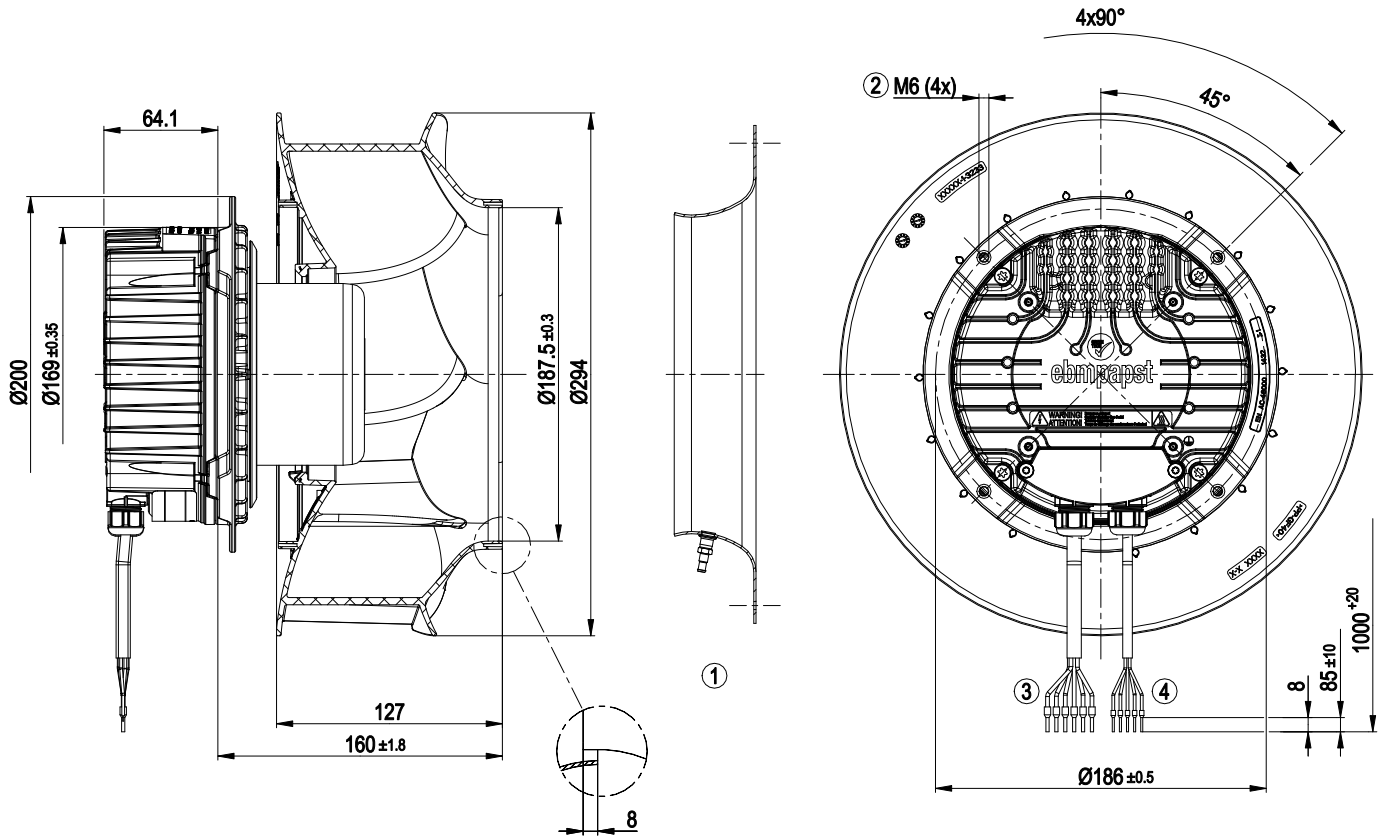
Technical description

Weight	0 kg
Size	280 mm
Motor size	84
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
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	- Output 10 VDC, max. 10 mA - Operation and alarm display - Alarm relay - Integrated PID controller - Power limiter - 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 - Temperature derating - 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
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1; CCC; EAC

EC centrifugal fan - RadiPac

backward-curved, single-intake

Product drawing

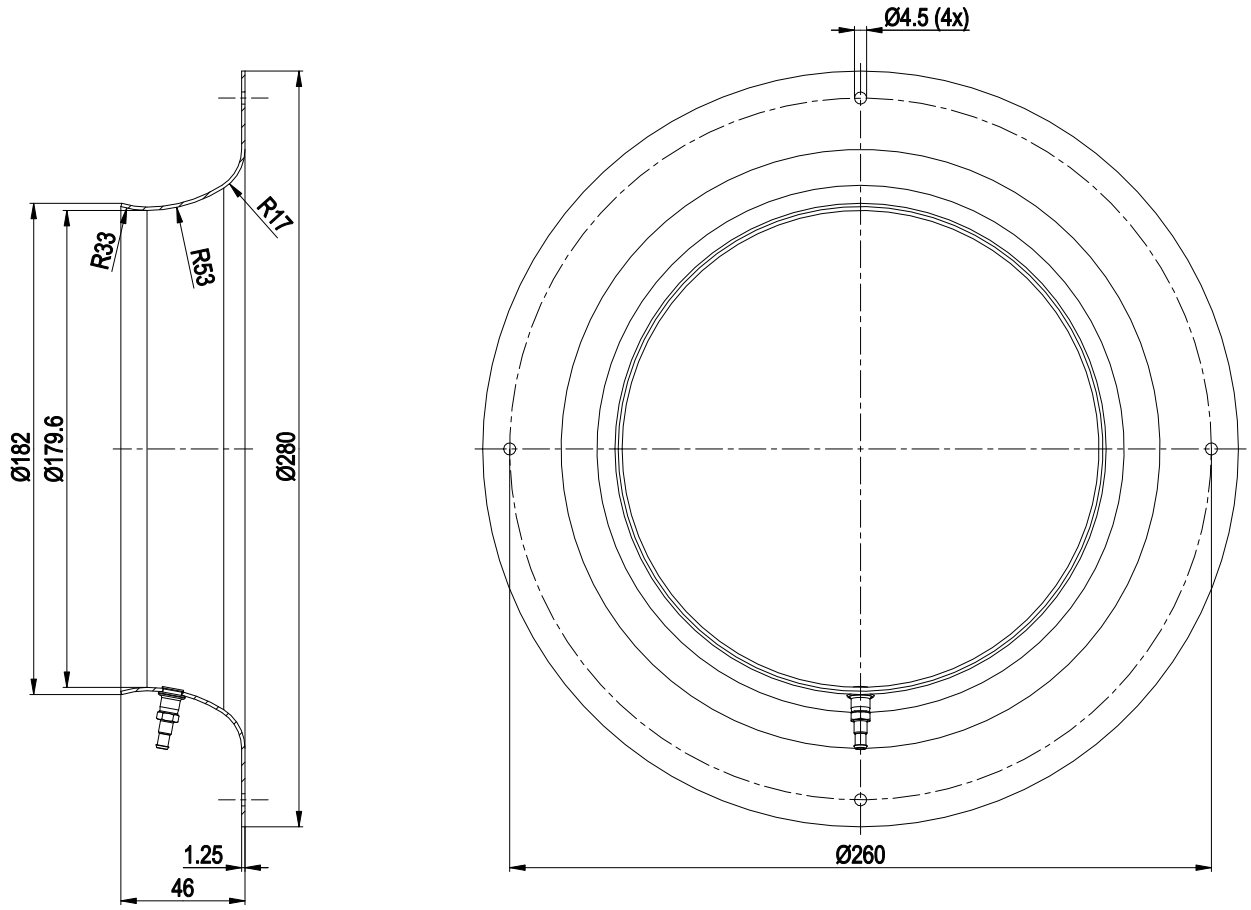


1	Accessory part: inlet ring 28004-2-4013 with pressure tap (k-factor: 77) not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18, 6x crimped ferrules
4	Cable PVC AWG22, 5x crimped ferrules

EC centrifugal fan - RadiPac

backward-curved, single-intake

Accessory part

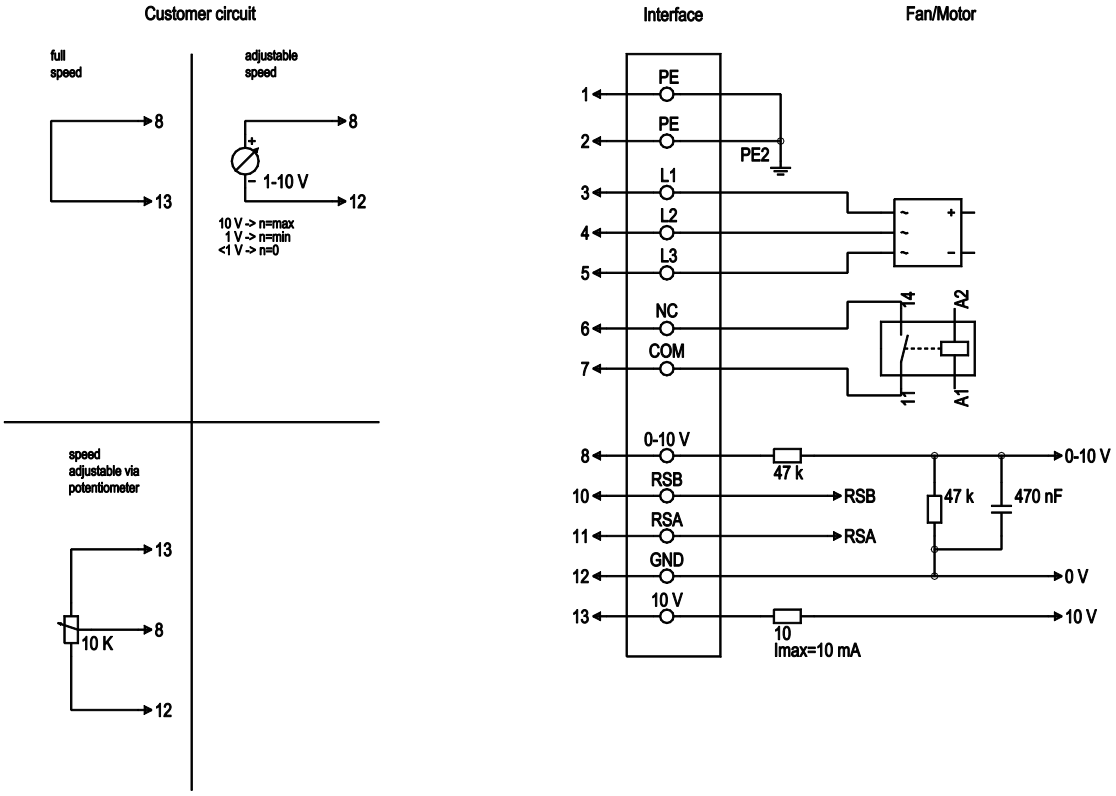


inlet ring 28004-2-4013 with pressure tap (k-factor: 77)

EC centrifugal fan - RadiPac

backward-curved, single-intake

Connection diagram

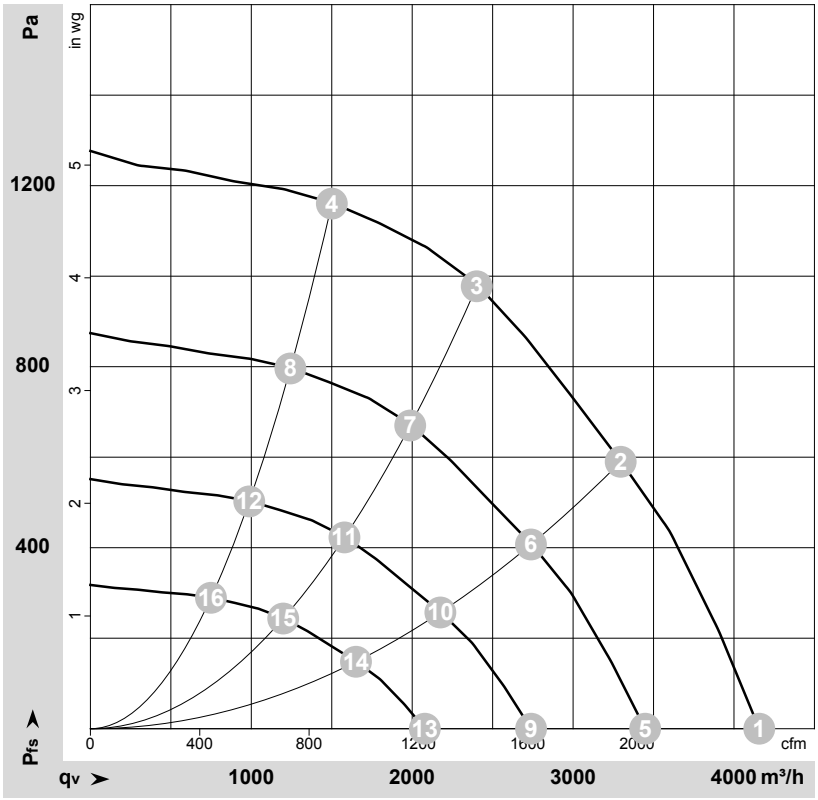


No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3, 4, 5	L1, L2, L3	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact, break for failure, contact rating 250 VAC/30 VDC 5 A minimum contact gap 1 mA/5 VDC, reinforced insulation on control interface side, functional insulation on supply side
1	7	COM	white 2	Status relay, floating status contact, common connection, contact rating 250 VAC/30 VDC 5 A minimum contact gap 1 mA/5 VDC, reinforced insulation on control interface side, functional insulation on supply side
2	8	0-10V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)

EC centrifugal fan - RadiPac

backward-curved, single-intake

Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-176661-1

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	in. wg
1	400	50	3400	742	1.20	86	92	4155	0	2445	0.00
2	400	50	3400	1006	1.59	79	87	3295	590	1940	2.37
3	400	50	3400	1075	1.70	72	79	2400	975	1415	3.91
4	400	50	3400	945	1.51	75	84	1500	1160	885	4.66
5	400	50	2820	423	0.68	81	88	3450	0	2030	0.00
6	400	50	2820	578	0.92	75	82	2740	409	1610	1.64
7	400	50	2820	613	0.98	67	75	1990	673	1170	2.70
8	400	50	2820	537	0.86	70	79	1245	798	730	3.20
9	400	50	2240	212	0.34	75	82	2740	0	1610	0.00
10	400	50	2240	290	0.46	69	77	2175	258	1280	1.04
11	400	50	2240	307	0.49	61	69	1580	425	930	1.71
12	400	50	2240	269	0.43	65	73	985	503	580	2.02
13	400	50	1700	93	0.15	68	75	2080	0	1225	0.00
14	400	50	1700	127	0.20	62	70	1650	149	970	0.60
15	400	50	1700	134	0.21	55	62	1200	245	705	0.98
16	400	50	1700	118	0.19	58	66	750	290	440	1.16

U = Voltage · 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