

R3G180-AA05-H1

# EC centrifugal fan

forward-curved, single-intake



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## Nominal data

Type	R3G180-AA05-H1	
Motor	M3G084-DF	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min <sup>-1</sup>	2360
Power consumption	W	500
Current draw	A	2.2
Min. back pressure	Pa	300
Min. back pressure	in. wg	1.2
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 (EN 17166)

		Actual	Req. 2015			
01 Overall efficiency $\eta_{es}$	%	50	34.6	09 Power consumption $P_{ed}$	kW	0.32
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	755
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	686
04 Efficiency grade N		59.4	44	10 Speed (rpm) n	min <sup>-1</sup>	2645
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 =  $1 + p_s / 100\,000\text{ Pa}$

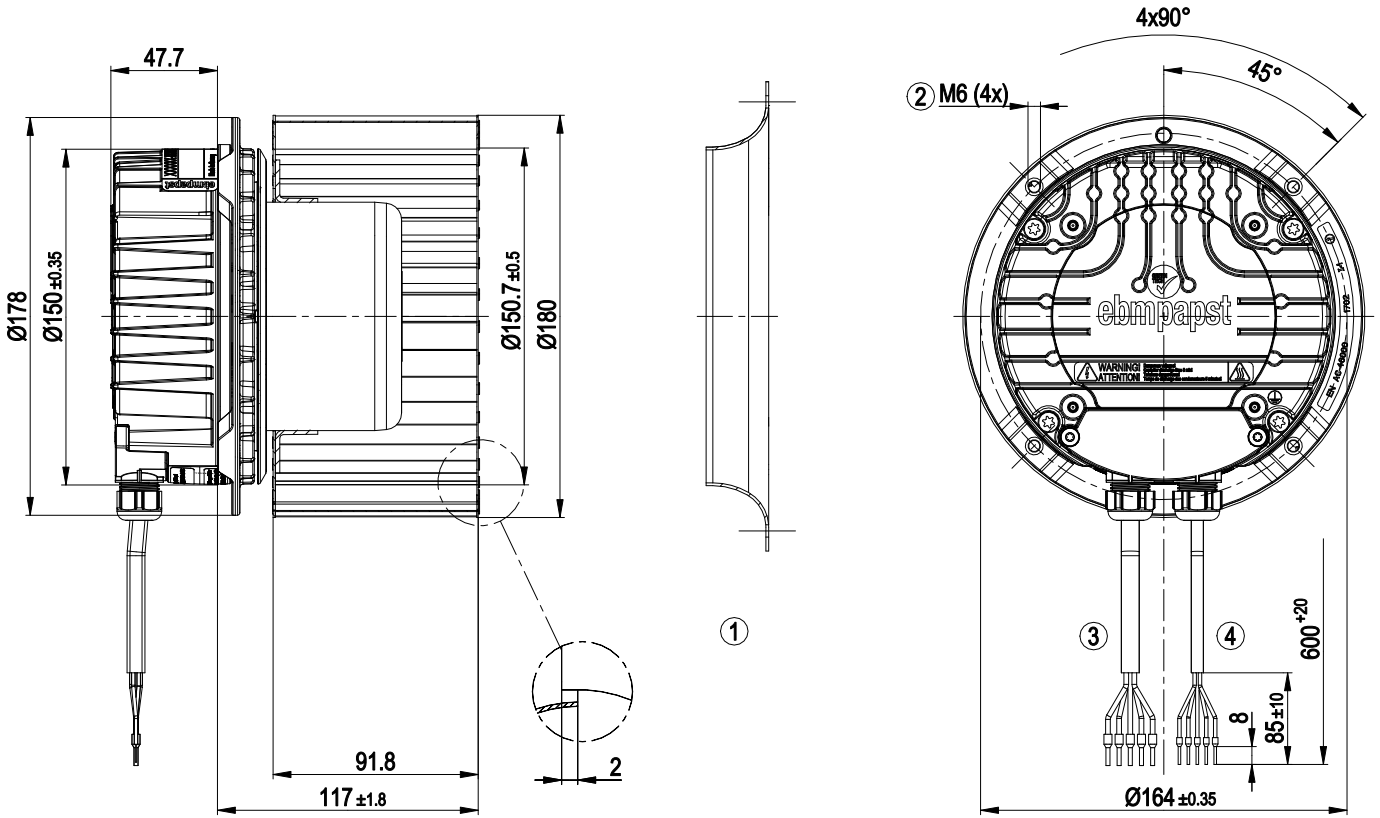
LU-155530



## Technical description

<b>Weight</b>	4 kg
<b>Size</b>	180 mm
<b>Motor size</b>	84
<b>Rotor surface</b>	Painted black
<b>Electronics housing material</b>	Die-cast aluminum
<b>Impeller material</b>	Sheet steel, galvanized
<b>Number of blades</b>	38
<b>Direction of rotation</b>	Clockwise, viewed toward rotor
<b>Degree of protection</b>	IP55
<b>Insulation class</b>	"F"
<b>Moisture (F) / Environmental (H) protection class</b>	H1
<b>Max. permitted ambient temp. for motor (transport/storage)</b>	+80 °C
<b>Min. permitted ambient temp. for motor (transport/storage)</b>	-40 °C
<b>Installation position</b>	Any
<b>Condensation drainage holes</b>	None
<b>Mode</b>	S1
<b>Motor bearing</b>	Ball bearing
<b>Technical features</b>	<ul style="list-style-type: none"> <li>- Output 10 VDC, max. 10 mA</li> <li>- Operation and alarm display</li> <li>- Alarm relay</li> <li>- Integrated PID controller</li> <li>- Power limiter</li> <li>- Motor current limitation</li> <li>- PFC, active</li> <li>- RS-485 MODBUS-RTU</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from supply</li> <li>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage / phase failure detection</li> </ul>
<b>EMC immunity to interference</b>	According to EN 61000-6-2 (industrial environment)
<b>EMC circuit feedback</b>	According to EN 61000-3-2/3
<b>EMC interference emission</b>	According to EN 61000-6-3 (household environment)
<b>Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)</b>	<= 3.5 mA
<b>Motor protection</b>	Thermal overload protector (TOP) internally connected
<b>With cable</b>	Variable
<b>Protection class</b>	I (with customer connection of protective earth)
<b>Conformity with standards</b>	EN 61800-5-1; EN 60335-1; CE
<b>Approval</b>	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

Product drawing

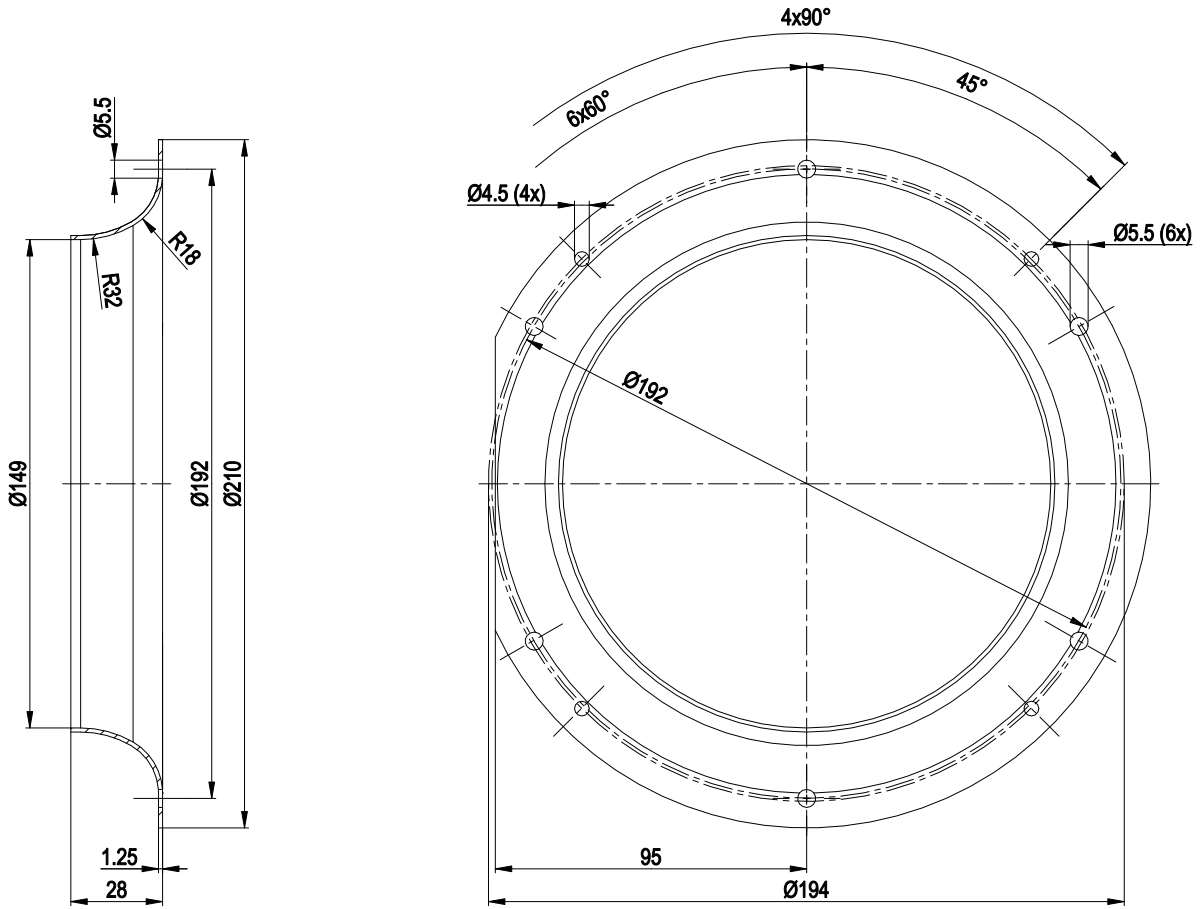


1	Accessory part: inlet ring 09597-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18, 5x crimped ferrules
4	Cable PVC AWG22, 5x crimped ferrules

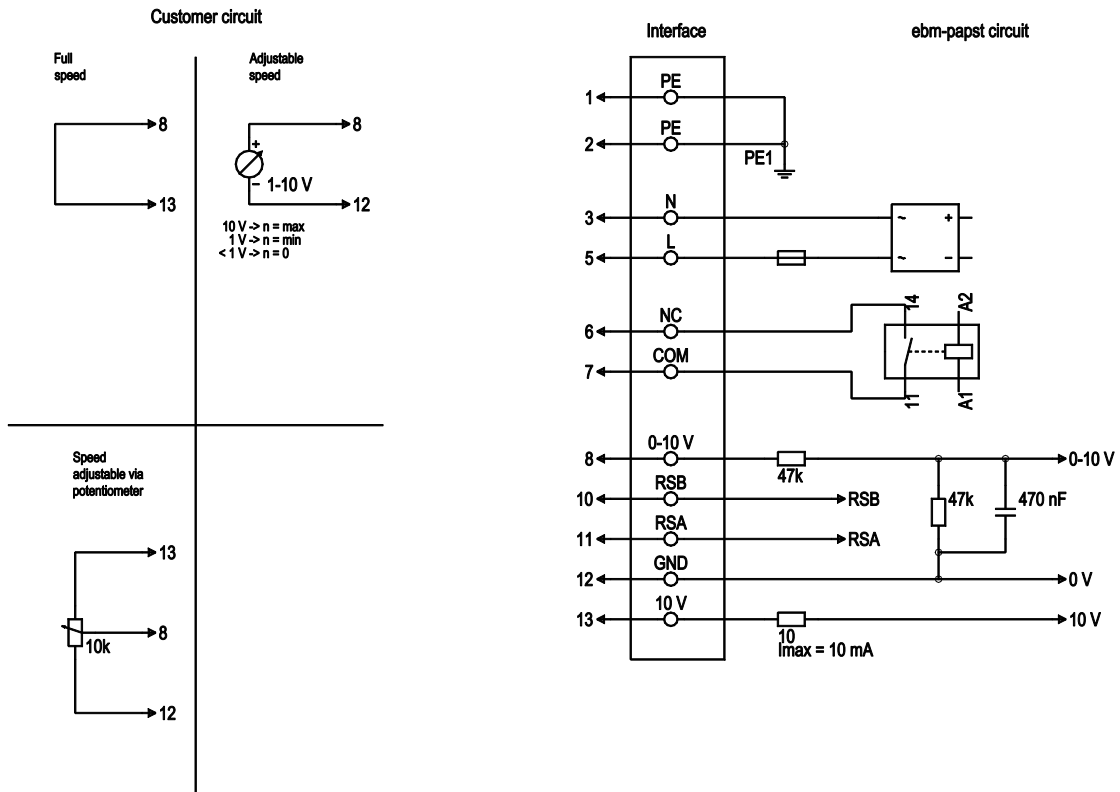
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## Accessory part

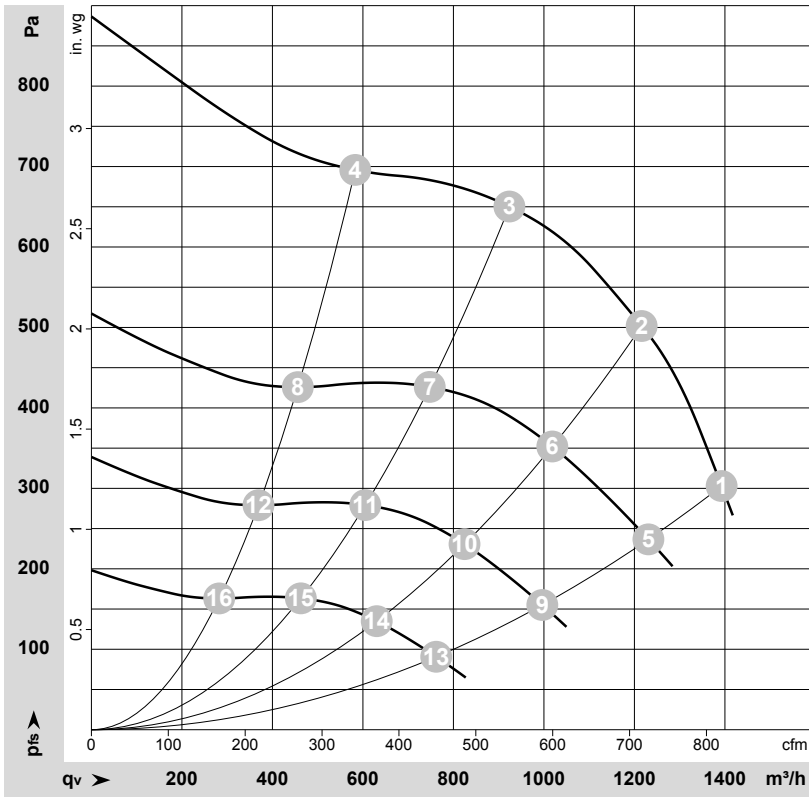


## Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact; common connection, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
2	8	0-10V	yellow	Analog input (set value); 0-10 V; $R_i = 100\text{ k}\Omega$ ; adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB
2	11	RSA	white	RS485 interface for MODBUS, RSA
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V $\pm 3\%$ ; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. pot)

## Curves: Air performance 50 Hz



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

Measurement: LU-155530-1

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

	Wired	U	f	n	P <sub>ed</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
		V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	1~	230	50	2360	500	2.20	76	81	1395	300	820	1.20
2	1~	230	50	2515	468	2.06	75	80	1215	500	715	2.01
3	1~	230	50	2620	353	1.56	73	78	925	650	545	2.61
4	1~	230	50	2710	226	1.02	72	77	585	700	345	2.81
5	1~	230	50	2100	354	1.55	73	78	1230	238	725	0.96
6	1~	230	50	2100	282	1.24	70	76	1020	352	600	1.41
7	1~	230	50	2100	204	0.90	67	73	750	427	440	1.71
8	1~	230	50	2100	127	0.57	65	71	455	425	270	1.71
9	1~	230	50	1700	188	0.82	67	73	995	156	585	0.63
10	1~	230	50	1700	150	0.66	65	70	825	231	485	0.93
11	1~	230	50	1700	108	0.48	62	67	605	280	355	1.12
12	1~	230	50	1700	67	0.30	60	66	370	278	215	1.12
13	1~	230	50	1300	84	0.37	61	66	760	91	450	0.37
14	1~	230	50	1300	67	0.29	58	63	630	135	370	0.54
15	1~	230	50	1300	48	0.21	55	61	465	164	275	0.66
16	1~	230	50	1300	30	0.13	53	59	280	163	165	0.65

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
 q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

