

R3G500-AF34-01

# EC centrifugal fan

backward-curved, single-intake



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## Nominal data

Type	R3G500-AF34-01	
Motor	M3G112-GA	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min <sup>-1</sup>	1160
Power consumption	W	810
Current draw	A	1.55
Max. ambient temperature	°C	60

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 $\eta_{es}$	%	61.7	50.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		73.3	62
05 Variable speed drive		Yes	

Data obtained at optimum efficiency level.

The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

09 Power consumption $P_{ed}$	kW	0.79
09 Air flow $q_v$	m <sup>3</sup> /h	5405
09 Pressure increase $p_{fs}$	Pa	300
10 Speed (rpm) n	min <sup>-1</sup>	1160
11 Specific ratio*		1.00

\* Specific ratio =  $1 + p_s / 100\,000\text{ Pa}$

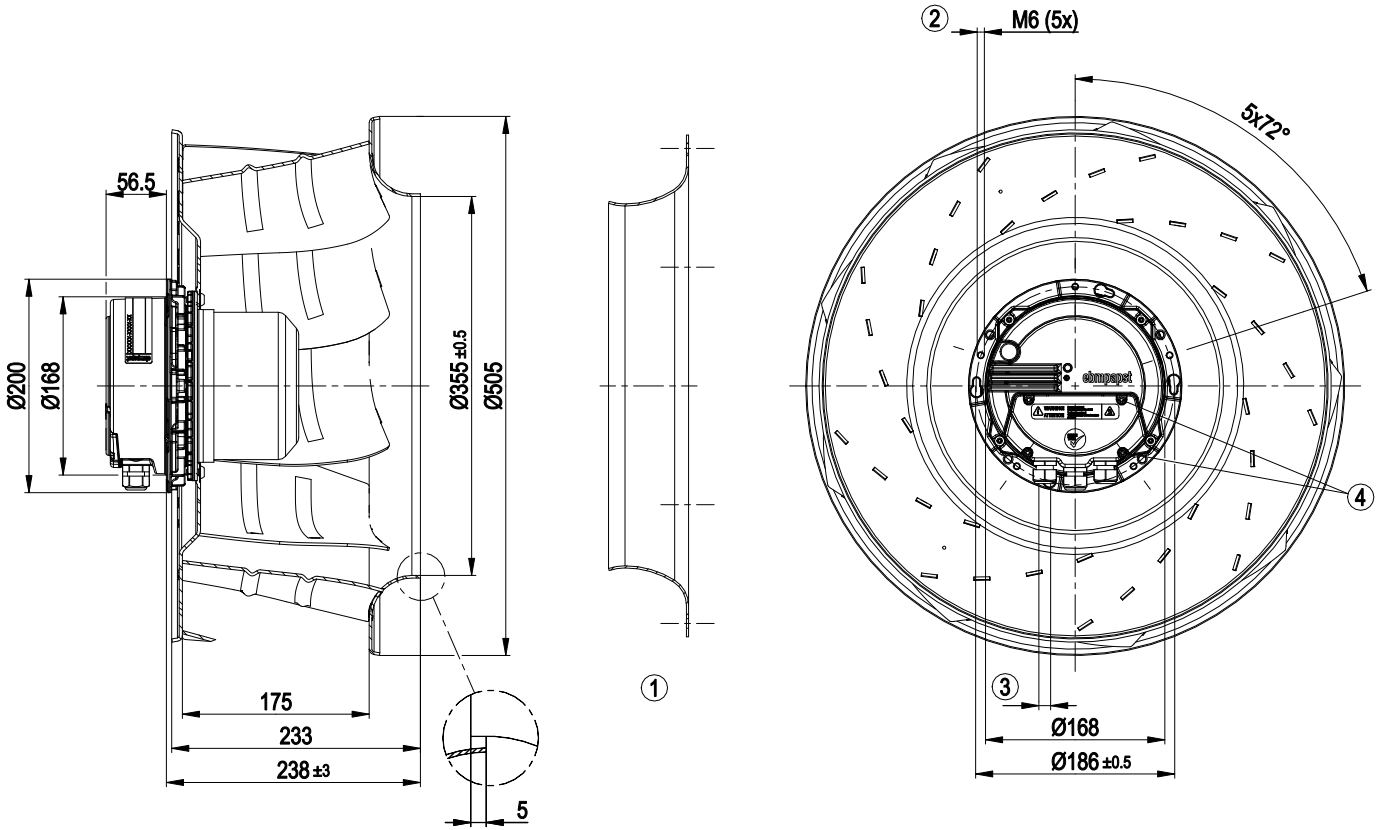
LU-74028



## Technical description

<b>Weight</b>	13.0 kg
<b>Size</b>	500 mm
<b>Motor size</b>	112
<b>Rotor surface</b>	Painted black
<b>Electronics housing material</b>	Die-cast aluminum
<b>Impeller material</b>	Sheet aluminum
<b>Number of blades</b>	9
<b>Direction of rotation</b>	Clockwise, viewed toward rotor
<b>Degree of protection</b>	IP54
<b>Insulation class</b>	"B"
<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>	Shaft horizontal or rotor on bottom; rotor on top on request
<b>Condensation drainage holes</b>	On rotor side
<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>- Output 20 VDC, max. 50 mA</li> <li>- Output for slave 0-10 V</li> <li>- Input for sensor 0-10 V or 4-20 mA</li> <li>- Alarm relay</li> <li>- Integrated PID controller</li> <li>- Motor current limitation</li> <li>- PFC, passive</li> <li>- RS-485 ebmBUS</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from the mains</li> <li>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage / phase failure detection</li> </ul>
<b>Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)</b>	<= 3.5 mA
<b>Electrical hookup</b>	Terminal box
<b>Motor protection</b>	Thermal overload protector (TOP) internally connected
<b>With cable</b>	Variable
<b>Protection class</b>	I (according to EN 61800-5-1)
<b>Conformity with standards</b>	EN 61800-5-1; CE
<b>Approval</b>	EAC

Product drawing

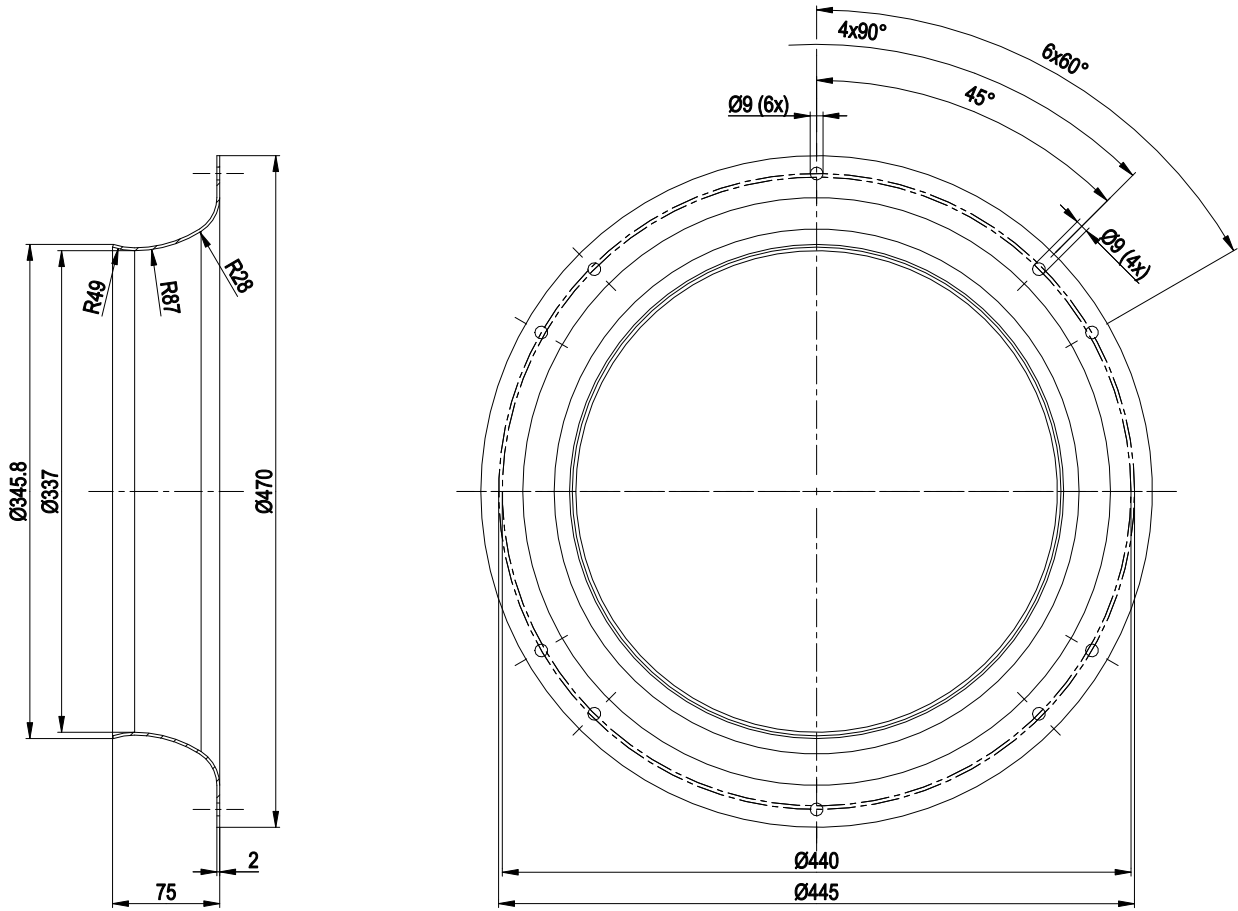


1	Accessory part: inlet ring 63072-2-4013, not included in scope of delivery.
2	Max. clearance for screw 16 mm
3	Cable diameter min. 4 mm, max. 10 mm; tightening torque $2.5 \pm 0.4$ Nm
4	Tightening torque $3.5 \pm 0.5$ Nm

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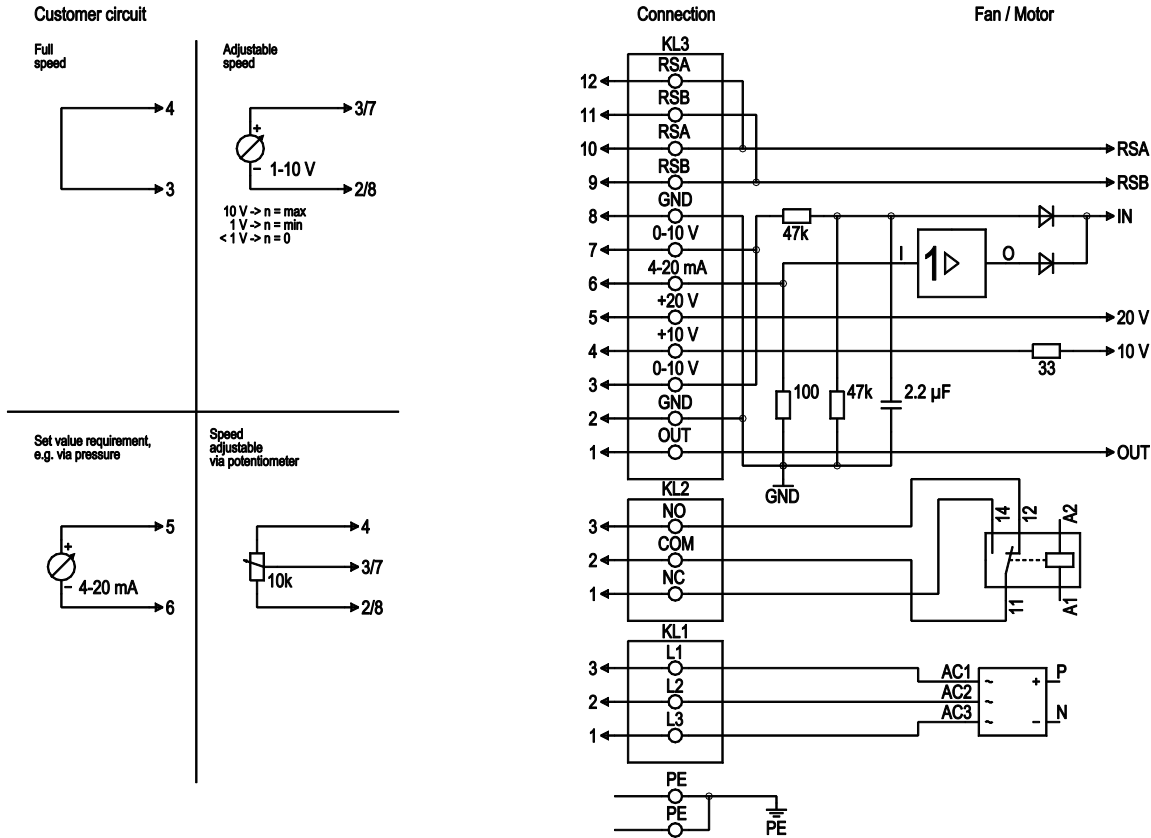
## Accessory part



inlet ring 63072-2-4013 not included in scope of delivery

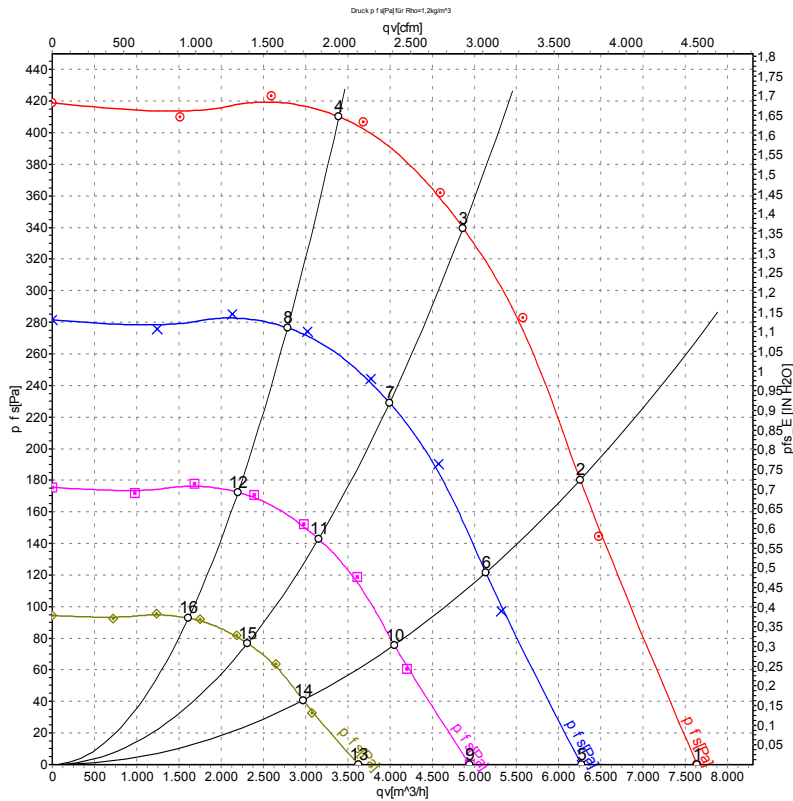


## Connection diagram



No.	Conn.	Designation	Function/assignment
PE		PE	Protective earth terminal
KL1	1, 2, 3	L1, L2, L3	Power supply 50/60 Hz
KL2	1	NC	Floating status contact, break for failure
KL2	2	COM	floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
KL2	3	NO	Floating status contact, make for failure
KL3	1	OUT	Analog output, 0-10 VDC, max. 3 mA, SELV, output of current motor modulation level: 1 V corresponds to 10% modulation level. 10 V corresponds to 100% modulation level.
KL3	2, 8	GND	Reference ground for control interface, SELV
KL3	3, 7	0-10 V	Use control / current sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input, SELV
KL3	4	+10 V	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV
KL3	5	+20 V	Voltage output 20 VDC (+25%/-10%), max. 50 mA, power supply for external devices (e.g. sensors), SELV
KL3	6	4-20 mA	Use control / current sensor value input 4-20 mA, impedance 100 Ω only as alternative to 0-10 V input, SELV
KL3	9, 11	RSB	RS485 interface for ebmBUS, RSB, SELV
KL3	10, 12	RSA	RS485 interface for ebmBUS, RSA, SELV

## Curves: Air performance 50 Hz



Measurement: LU-105321-1

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 <sub>ed</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	LwA <sub>out</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)	dB(A)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	400	50	1160	563	0.96	76	83	86	7640	0	4495	0.00
2	400	50	1160	721	1.22	69	76	80	6255	180	3680	0.72
3	400	50	1160	810	1.55	64	71	77	4865	340	2865	1.36
4	400	50	1160	726	1.22	64	72	77	3395	410	2000	1.65
5	400	50	950	311	0.53	72	79	81	6265	0	3690	0.00
6	400	50	950	399	0.67	65	72	76	5135	120	3020	0.48
7	400	50	950	445	0.73	60	67	73	3995	229	2350	0.92
8	400	50	950	402	0.68	60	67	73	2785	277	1640	1.11
9	400	50	750	153	0.26	67	74	76	4945	0	2910	0.00
10	400	50	750	196	0.33	60	67	71	4055	75	2385	0.30
11	400	50	750	219	0.36	55	62	68	3155	143	1855	0.57
12	400	50	750	198	0.33	55	62	68	2200	173	1295	0.69
13	400	50	550	60	0.10	60	67	69	3630	0	2135	0.00
14	400	50	550	77	0.13	53	60	64	2975	40	1750	0.16
15	400	50	550	86	0.14	48	55	61	2315	77	1360	0.31
16	400	50	550	78	0.13	48	55	61	1615	93	950	0.37

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  
 LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

