

R3G355-AI56-25

# EC centrifugal fan

backward-curved, single-intake



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## Nominal data

Type	R3G355-AI56-25	
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 <sup>-1</sup>	2200
Power consumption	W	950
Current draw	A	1.75
Min. ambient temperature	°C	-25
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 (EN 17166)

		Actual	Req. 2015			
01 Overall efficiency $\eta_{es}$	%	59.9	51.1	09 Power consumption $P_{ed}$	kW	0.9
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	2805
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	642
04 Efficiency grade N		70.8	62	10 Speed (rpm) n	min <sup>-1</sup>	2220
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 =  $1 + p_{fs} / 100\,000\text{ Pa}$

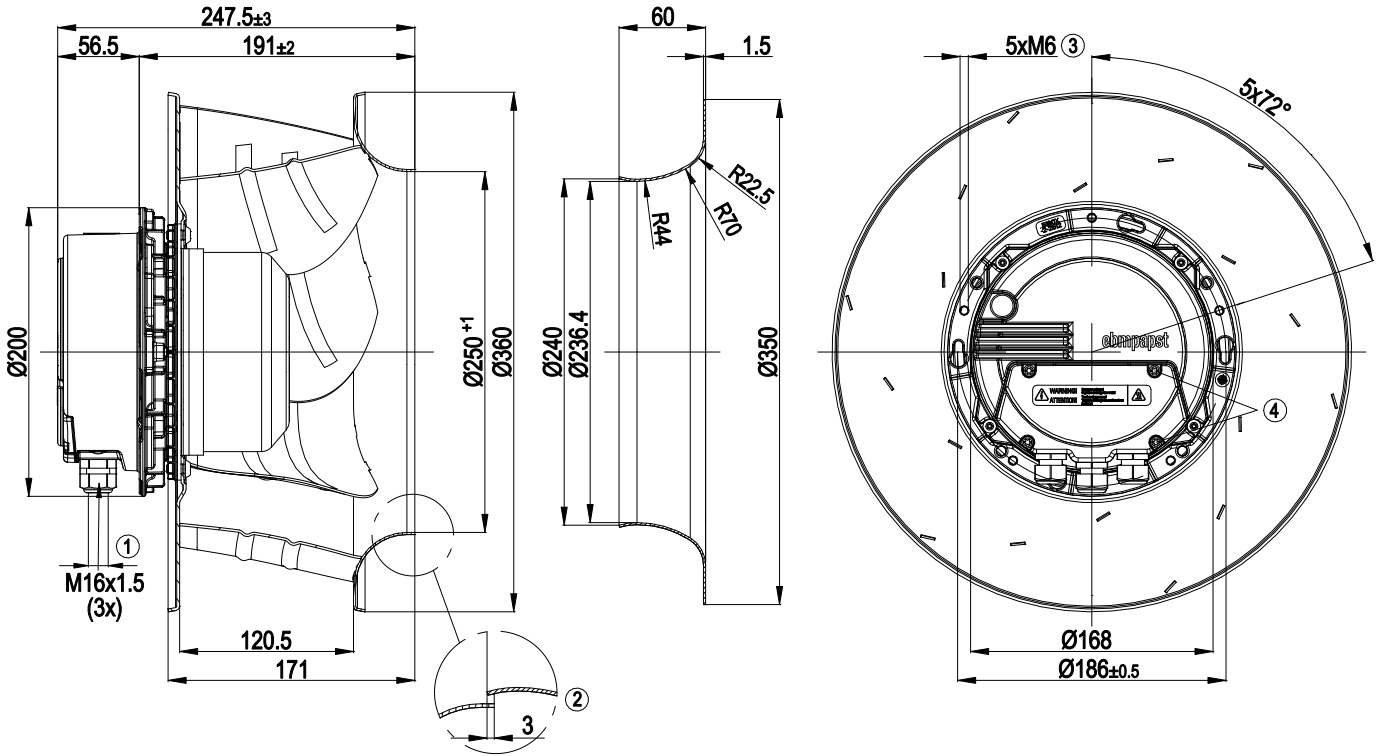
LU-78488



## Technical description

Weight	8.24 kg
Size	355 mm
Motor size	112
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	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	<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>- External 24 V input (parameter setting)</li> <li>- Alarm relay</li> <li>- Integrated PID controller</li> <li>- Cable break detection with control line</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>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage / phase failure detection</li> </ul>
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 61000-6-3 (household environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)
Conformity with standards	CE
Approval	CCC; EAC

Product drawing

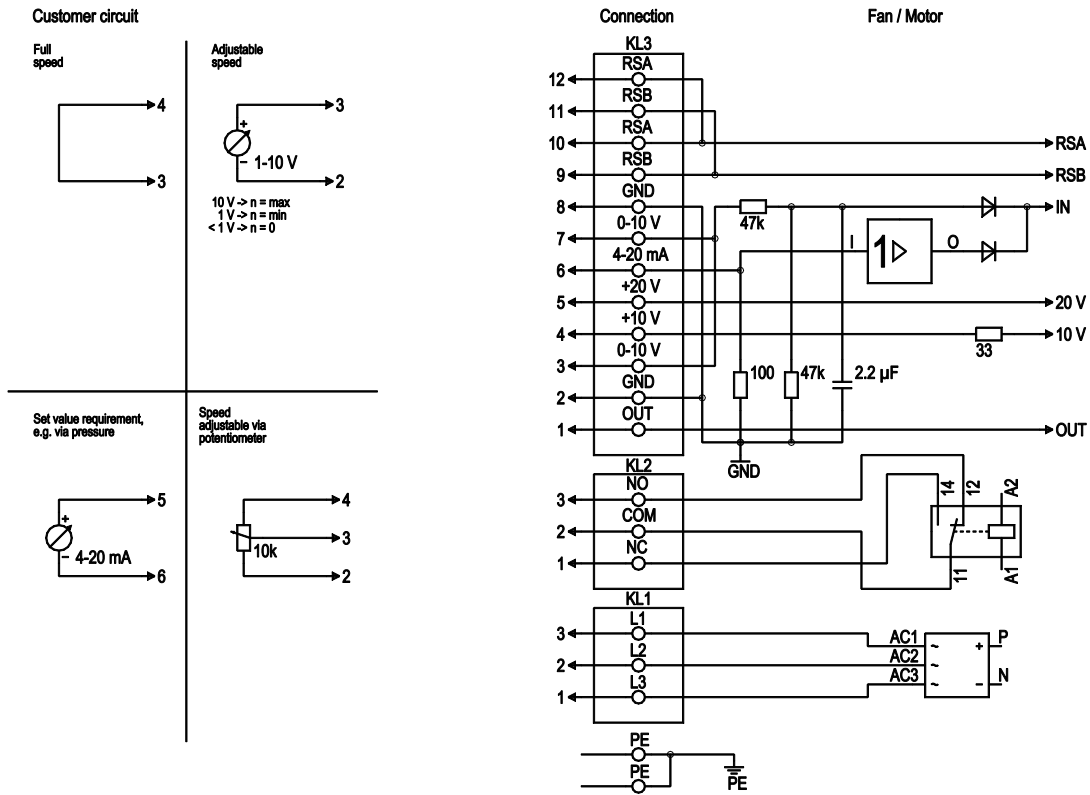


1	Cable diameter min. 4 mm, max. 10 mm; tightening torque 2.5 ± 0.4 Nm
2	Accessory part: Inlet ring: 35560-2-4013 not included in scope of delivery, other inlet rings on request
3	Clearance for screw 12-16 mm
4	Tightening torque 3.5 ± 0.5 Nm

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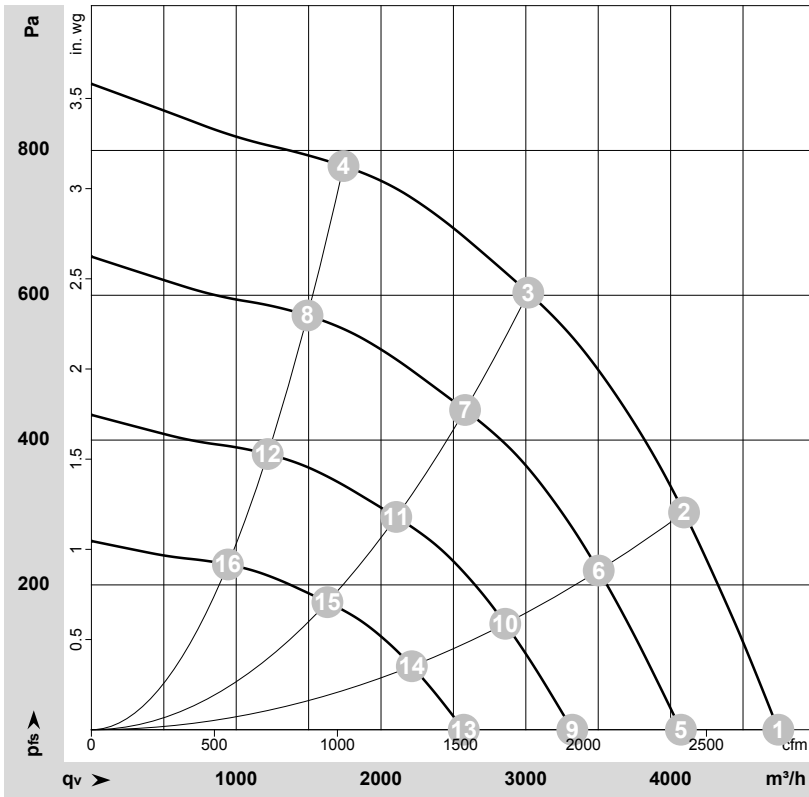
## Connection diagram



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 or $n < 60$ rpm
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 or $n < 60$ rpm
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 k $\Omega$ only as alternative to 4-20 mA input, SELV
KL3	4	+10 V	Voltage output 10 VDC ( $\pm 3\%$ ), max. 10 mA, power supply for external devices (e.g. potentiometers), 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 $\Omega$ 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



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

Measurement: LU-78488-1

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	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
		V	Hz	min <sup>-1</sup>	W	A	m <sup>3</sup> /h	Pa	cfm	in. wg
1	3~	400	50	2200	690	1.35	4745	0	2790	0.00
2	3~	400	50	2200	868	1.63	4095	300	2410	1.20
3	3~	400	50	2200	950	1.75	3015	600	1775	2.41
4	3~	400	50	2200	788	1.51	1740	780	1025	3.13
5	3~	400	50	1900	436	0.85	4070	0	2395	0.00
6	3~	400	50	1900	544	1.02	3505	221	2060	0.89
7	3~	400	50	1900	582	1.08	2580	442	1520	1.77
8	3~	400	50	1900	496	0.95	1490	572	880	2.30
9	3~	400	50	1550	237	0.46	3320	0	1955	0.00
10	3~	400	50	1550	295	0.56	2860	147	1680	0.59
11	3~	400	50	1550	316	0.58	2105	294	1240	1.18
12	3~	400	50	1550	269	0.52	1215	381	715	1.53
13	3~	400	50	1200	110	0.21	2570	0	1515	0.00
14	3~	400	50	1200	137	0.26	2215	88	1305	0.35
15	3~	400	50	1200	147	0.27	1630	176	960	0.71
16	3~	400	50	1200	125	0.24	945	228	555	0.92

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase