R3G355-AZ59-05

EC centrifugal fan

backward-curved, single-intake

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Nominal data

Type	**R3G355-AZ59-05**
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^{-1}	2800
Power consumption	W	1500
Current draw	A	2.4
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 η_{es}	%	60.7	41
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		69.7	50
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.38
09 Air flow q_v	m^3/h	3210
09 Pressure increase p_{fs}	Pa	873
10 Speed (rpm) n	min^{-1}	2770
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-129227

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Technical description

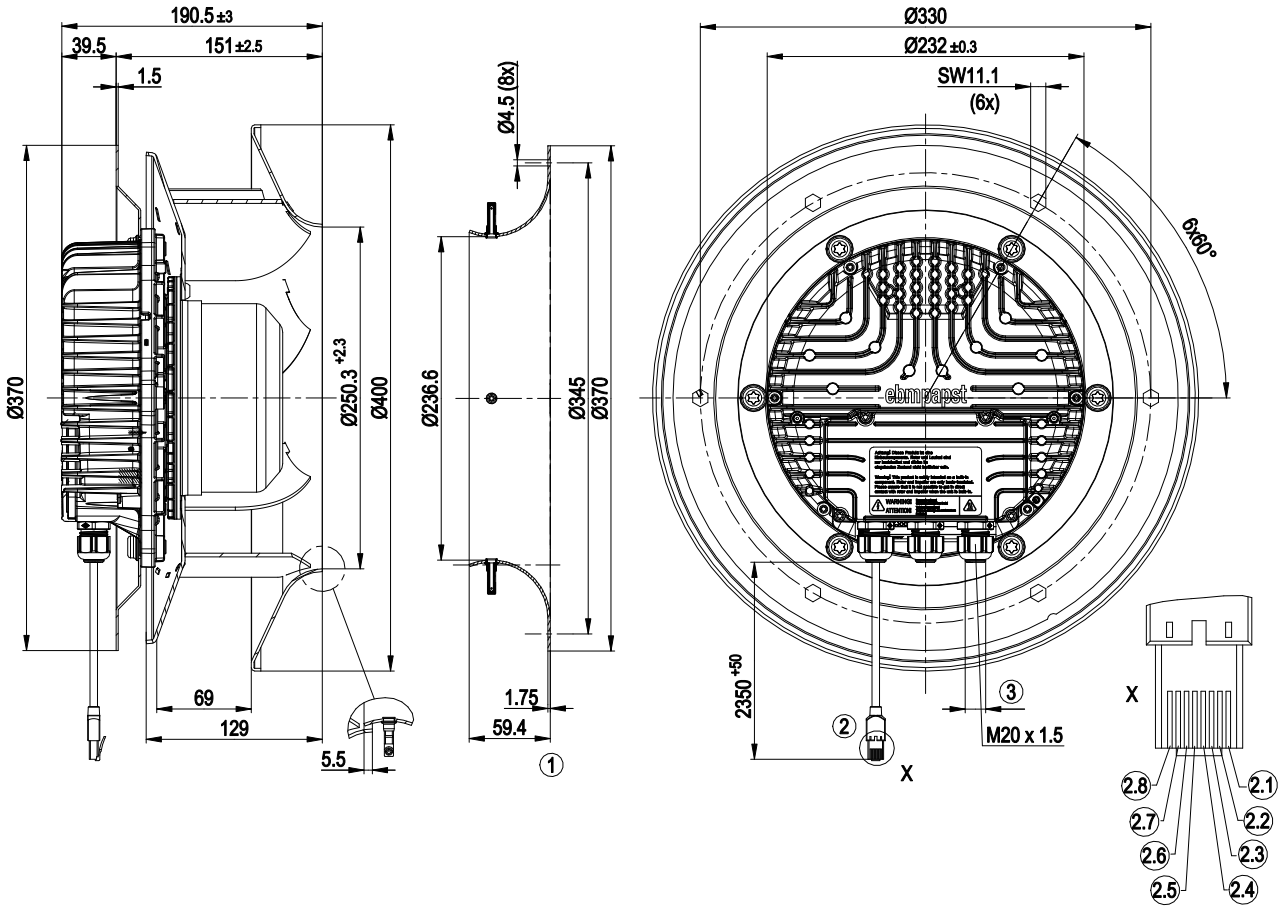
Weight	11.7 kg
Size	355 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) 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	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Operation and alarm display - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU, 8-bit version - Soft start - 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)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Connector with cable
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Approval	CSA C22.2 No. 100; UL 1004-1

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Product drawing



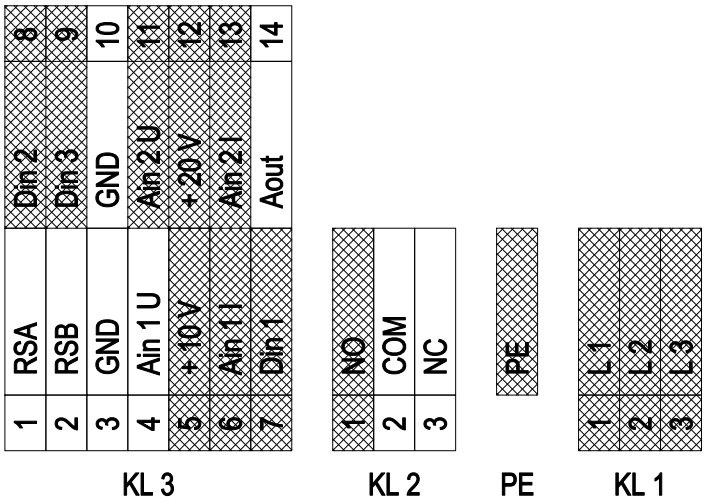
1	Accessory parts: Inlet ring with piezometer 35530-6-4013 and inlet ring 35550-2-4013 not included in scope of delivery
2	Control cable PVC with plug RJ-45 (8 contacts)
2.1	Ain1 U
2.2	GND
2.3	Aout
2.4	GND
2.5	COM
2.6	NC
2.7	RSA
2.8	RSB
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm

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Connection diagram



shaded gray => not brought out via leads

No.	Conn.	Designation	Function/assignment
KL 1	1	L1	Supply connection, power supply 3-phase 380-480 VAC; 50/60 Hz
KL 1	2	L2	Supply connection, power supply 3-phase 380-480 VAC; 50/60 Hz
KL 1	3	L3	Supply connection, power supply 3-phase 380-480 VAC; 50/60 Hz
PE		PE	Ground connection, PE connection
KL 2	1	NO	Status relay, floating status contact; make for failure
KL2	2	COM	Status relay; floating status contact; changeover contact; common connection; contact rating 250 VAC/ max. 2 A (AC1)/min. 10 mA
KL2	3	NC	Status relay, floating status contact; break for failure
KL 3	1	RSA	Bus connection RS485; RSA; MODBUS RTU
KL 3	2	RSB	Bus connection RS485; RSB; MODBUS RTU
KL 3	3 / 10	GND	Reference ground for control interface
KL 3	4	Ain1 U	Analog input 1 (set value); 0-10 V; Ri = 100 kΩ; adjustable curves; only usable as alternative to input Ain1 I
KL 3	5	+ 10 V	Fixed voltage output 10 VDC; + 10 V +/-3 %; max. 10 mA; short-circuit-proof; power supply for ext. devices (e.g. potentiometers)
KL 3	6	Ain1 I	Analog input 1 (set value); 4-20 mA, Ri = 100 Ω; adjustable curves; only usable as alternative to input Ain1 U
KL 3	7	Din1	Digital input 1: Enable electronics; Enable: Pin open or applied voltage 5...50 VDC; Disable: Bridge to GND or applied voltage < 1 VDC; Reset function: Triggers software reset after a level change to <1 V
KL 3	8	Din2	Digital input 2: Switching parameter sets 1/2; according to EEPROM setting, the valid or used parameter set can be selected via bus or via digital input DIN2. Parameter set 1: Pin open or applied voltage 5...50 VDC; Parameter set 2: Bridge to GND or applied voltage < 1 VDC
KL 3	9	Din3	Digital input 3: Direction of action of integrated controller; Depending on EEPROM setting, the direction of action of the integrated controller can be selected as normal/inverse via bus or digital input; Normal: Pin open or applied voltage 5...50 VDC; Inverse: Bridge to GND or applied voltage < 1 VDC
KL 3	11	Ain2 U	Analog input 2; measured value 0-10 V; Ri = 100 kΩ; adjustable curve; only usable as alternative to input Ain2 I
KL 3	12	+ 20 V	Fixed voltage output 20 VDC; + 20 V +25/-10%; max. 50 mA; short-circuit-proof power supply for ext. devices (e.g. sensors)
KL 3	13	Ain2 I	Analog input 2; measured value: 4-20 mA; Ri = 100 Ω; adjustable curve; only usable as alternative to input Ain2 U

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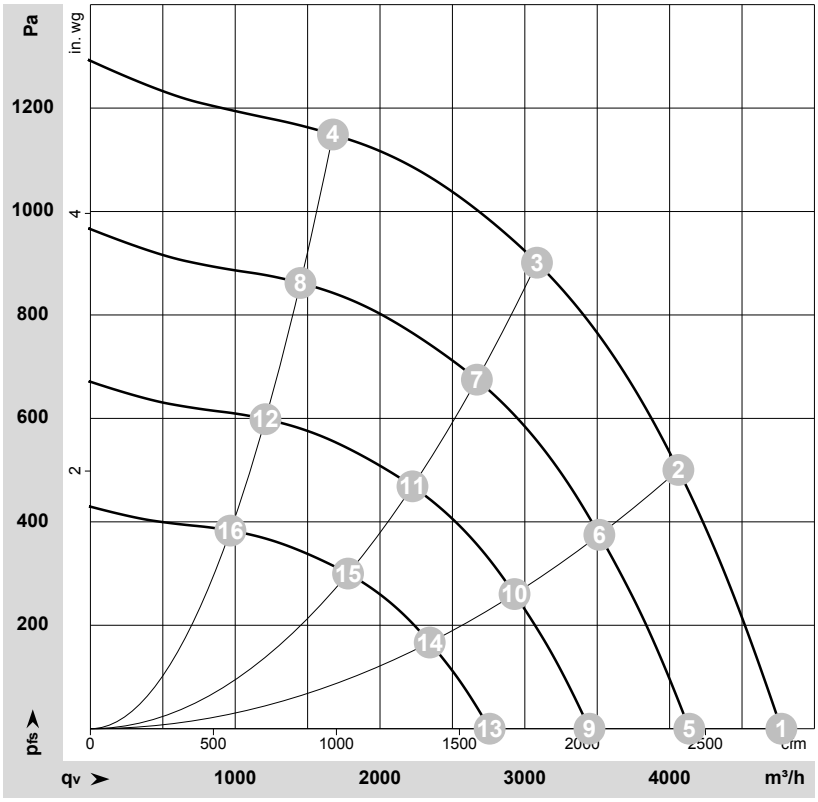
No.	Conn.	Designation	Function/assignment
KL 3	14	Aout	Analog output 0-10 V; max. 5 mA; output of current motor modulation level/current motor speed.

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-129227-1

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

	Wired	U	f	n	P_{ed}	I	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	3~	400	50	2800	888	1.44	4770	0	2810	0.00
2	3~	400	50	2800	1241	1.96	4060	500	2390	2.01
3	3~	400	50	2800	1500	2.40	3085	900	1815	3.61
4	3~	400	50	2800	1186	1.89	1675	1150	985	4.62
5	3~	400	50	2400	578	0.94	4135	0	2435	0.00
6	3~	400	50	2400	804	1.27	3515	377	2070	1.51
7	3~	400	50	2400	890	1.40	2670	677	1570	2.72
8	3~	400	50	2400	771	1.23	1450	862	855	3.46
9	3~	400	50	2000	335	0.54	3445	0	2030	0.00
10	3~	400	50	2000	465	0.74	2930	262	1725	1.05
11	3~	400	50	2000	515	0.81	2225	470	1310	1.89
12	3~	400	50	2000	446	0.71	1210	599	710	2.40
13	3~	400	50	1600	171	0.28	2755	0	1625	0.00
14	3~	400	50	1600	238	0.38	2345	167	1380	0.67
15	3~	400	50	1600	264	0.41	1780	301	1045	1.21
16	3~	400	50	1600	228	0.36	965	383	570	1.54

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase

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