

R3G500-AG25-64

# EC centrifugal fan

backward-curved, single-intake



R3G500-AG25-64 ebmpapst Datasheet  
sales@fansco.com  
www.fansco.com

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

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



## Nominal data

Type	R3G500-AG25-64	
Motor	M3G150-FF	
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>	1700
Power consumption	W	2500
Current draw	A	3.9
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 ErP Directive

		Actual	Req. 2015
01 Overall efficiency $\eta_{es}$	%	58.8	55.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		65.1	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	2.52
09 Air flow $q_v$	m <sup>3</sup> /h	6960
09 Pressure increase $p_{fs}$	Pa	724
10 Speed (rpm) $n$	min <sup>-1</sup>	1700
11 Specific ratio*		1.01

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

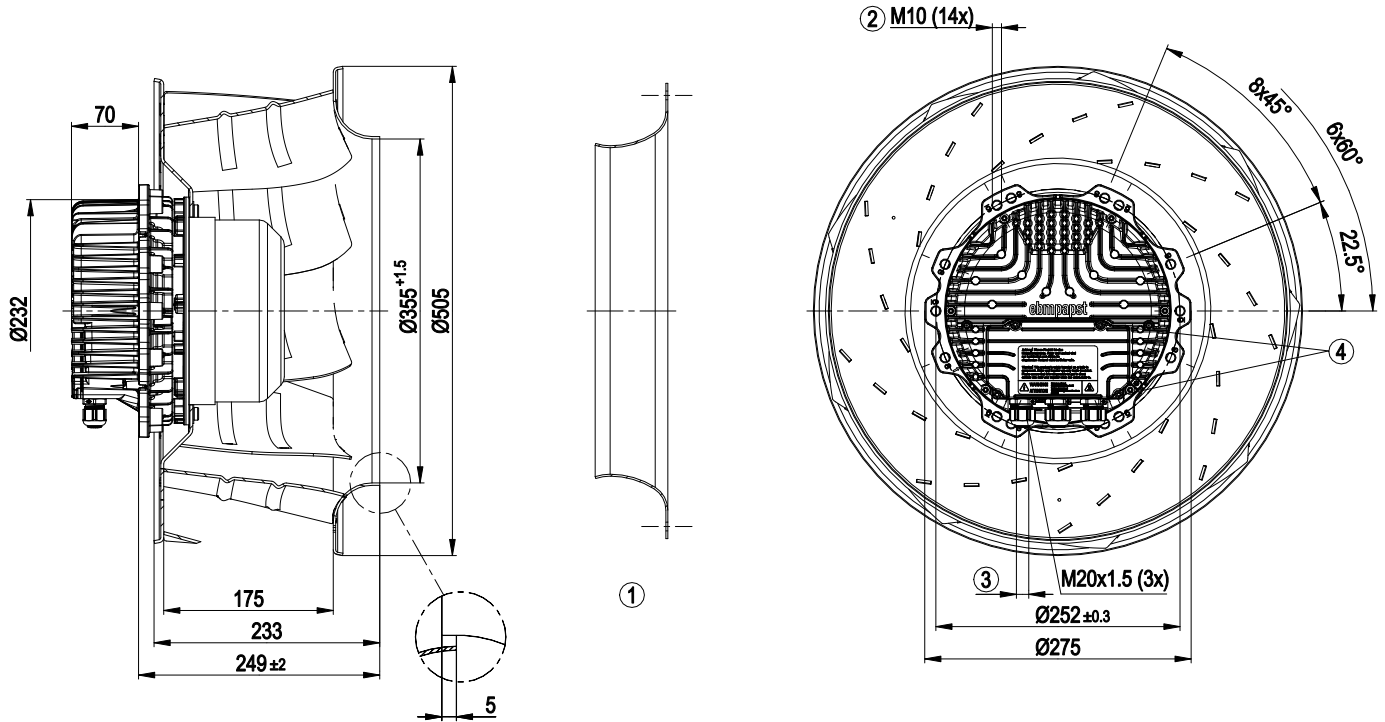
LU-116713



## Technical description

<b>Weight</b>	22.7 kg
<b>Fan size</b>	500 mm
<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>	IP55
<b>Insulation class</b>	"F"
<b>Moisture (F) / Environmental (H) protection class</b>	F4-1
<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>- Operation and alarm display</li> <li>- Input for sensor 0-10 V or 4-20 mA</li> <li>- External 24 V input (parameter setting)</li> <li>- External release input</li> <li>- Alarm relay</li> <li>- Integrated PID controller</li> <li>- Motor current limitation</li> <li>- PFC, passive</li> <li>- RS-485 MODBUS-RTU</li> <li>- Soft start</li> <li>- EEPROM write cycles: 100,000 maximum</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>EMC immunity to interference</b>	According to EN 61000-6-2 (industrial environment)
<b>EMC interference emission</b>	According to EN 61000-6-4 (industrial environment)
<b>Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)</b>	<= 3.5 mA
<b>Electrical hookup</b>	Via terminal box
<b>Motor protection</b>	Reverse polarity and locked-rotor protection
<b>Protection class</b>	I (with customer connection of protective earth)
<b>Conformity with standards</b>	EN 61800-5-1; CE
<b>Approval</b>	C22.2 No.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

Product drawing



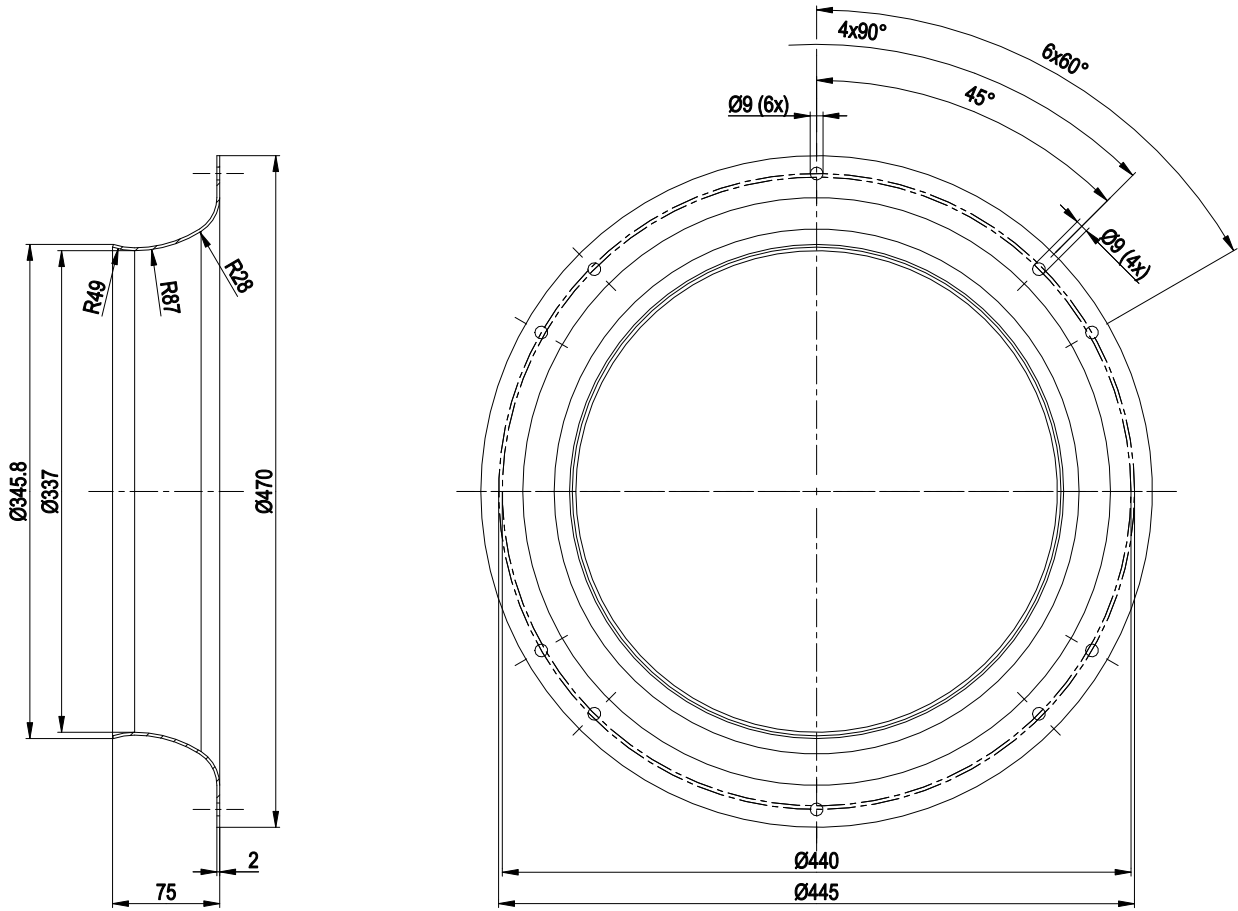
1	Accessory part: inlet ring 63072-2-4013 not included in scope of delivery
2	Max. clearance for screw 25 mm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
4	Tightening torque 3.5 ± 0.5 Nm



# EC centrifugal fan

backward-curved, single-intake

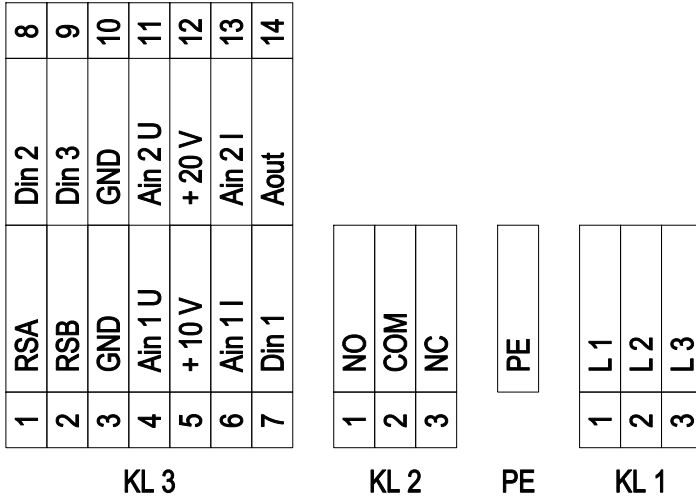
## Accessory part



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



## Connection diagram



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; SELV
KL 3	2	RSB	Bus connection RS485, RSB, MODBUS-RTU; SELV
KL 3	3 / 10	GND	Reference ground for control interface; SELV
KL 3	4	Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV
KL 3	5	+ 10 V	Fixed voltage output 10 VDC, +10 V ±3%, max. 10 mA, short-circuit-proof power supply for external devices (e.g. pot); SELV
KL 3	6	Ain1 I	Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1U; SELV
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 VDC; SELV
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; SELV
KL 3	9	Din3	Digital input 3: according to EEPROM setting, the integrated controller's direction of action 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; SELV
KL 3	11	Ain2 U	Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2I; SELV
KL 3	12	+ 20 V	Fixed voltage output 20 VDC, +20 V ±5/-10%, max. 50 mA, short-circuit-proof power supply for external devices (e.g. sensors); SELV



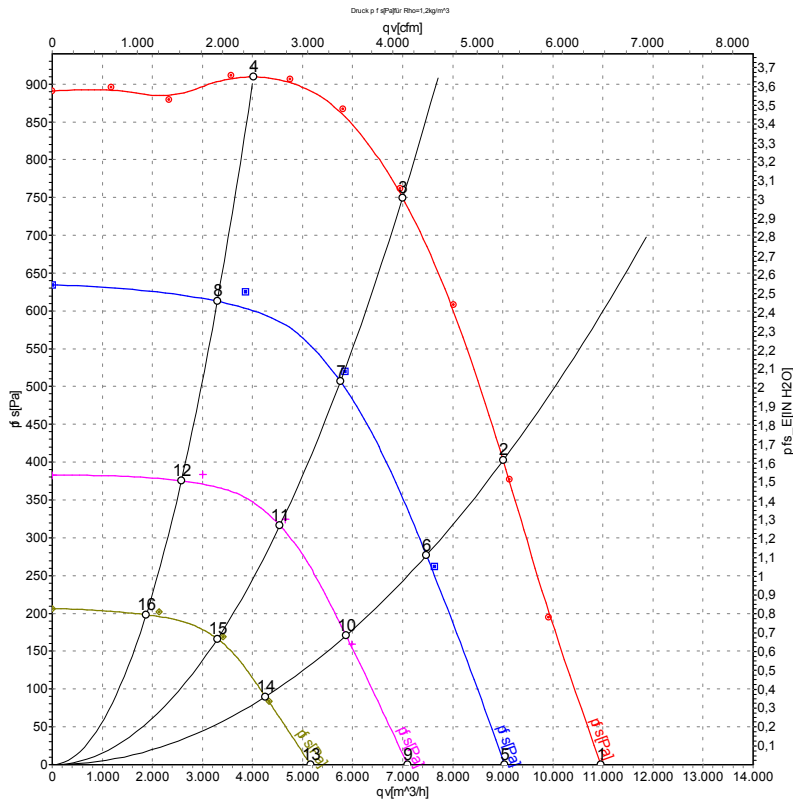
# EC centrifugal fan

backward-curved, single-intake

No.	Conn.	Designation	Function/assignment
KL 3	13	Ain2 I	Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2U; SELV
KL 3	14	Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV



## Curves: Air performance 50 Hz



Measurement: LU-116713-1  
 Measurement: LU-118204-1  
 Measurement: LU-118205-1  
 Measurement: LU-118206-1

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

	U	f	n	P <sub>ed</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	LwA <sub>out</sub>	qv	P <sub>fs</sub>	qv	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	inH <sub>2</sub> O
1	400	50	1700	1813	2.78	83	90	95	10960	0	6450	0.00
2	400	50	1700	2275	3.48	78	85	91	9010	400	5300	1.61
3	400	50	1700	2500	3.90	74	81	88	7000	750	4120	3.01
4	400	50	1700	2070	3.15	76	83	90	4015	910	2365	3.65
5	400	50	1400	952	1.49	77	84	89	9040	0	5320	0.00
6	400	50	1400	1193	1.85	73	79	86	7475	286	4400	1.15
7	400	50	1400	1324	2.04	69	76	83	5755	524	3385	2.10
8	400	50	1400	1008	1.57	70	77	84	3295	627	1940	2.52
9	400	50	1100	497	0.84	71	78	83	7100	0	4180	0.00
10	400	50	1100	628	1.02	66	73	79	5870	174	3455	0.70
11	400	50	1100	664	1.07	62	69	76	4545	328	2675	1.32
12	400	50	1100	546	0.91	63	70	77	2580	384	1520	1.54
13	400	50	800	181	0.41	61	69	73	5160	0	3040	0.00
14	400	50	800	239	0.49	56	64	70	4260	91	2505	0.37
15	400	50	800	257	0.52	54	61	68	3295	172	1940	0.69
16	400	50	800	230	0.48	54	61	69	1875	203	1105	0.81

U = Power supply · 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 · qv = Air flow · p<sub>fs</sub> = Pressure increase

