

R3G500-AR09-07 ebmpapst Datasheet

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Nominal data

Type	R3G500-AR09-07	
Motor	M3G150-NA	
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	2200
Power consumption	W	5400
Current draw	A	8.3
Min. ambient temperature	°C	-40
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 ErP Directive

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	64.8	59.2	09 Power consumption P_{ed}	kW	5.38
02 Measurement category		A		09 Air flow q_v	m ³ /h	9760
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	1238
04 Efficiency grade N		67.6	62	10 Speed (rpm) n	min ⁻¹	2210
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-154616



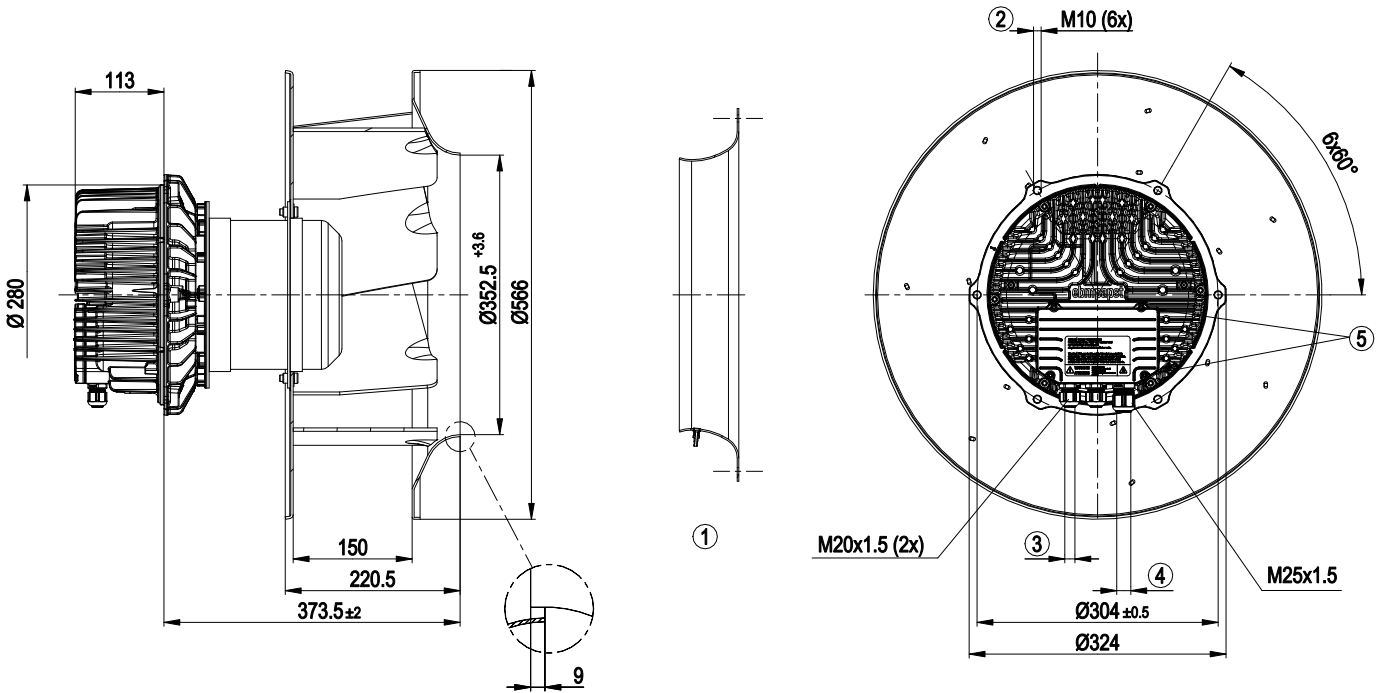
Technical description

Weight	24.6 kg
Fan size	500 mm
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	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-1
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"> - Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - 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
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Via terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (with customer connection of protective earth)
Conformity with standards	CE
Approval	C22.2 No.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

EC centrifugal fan

backward-curved, single-intake

Product drawing



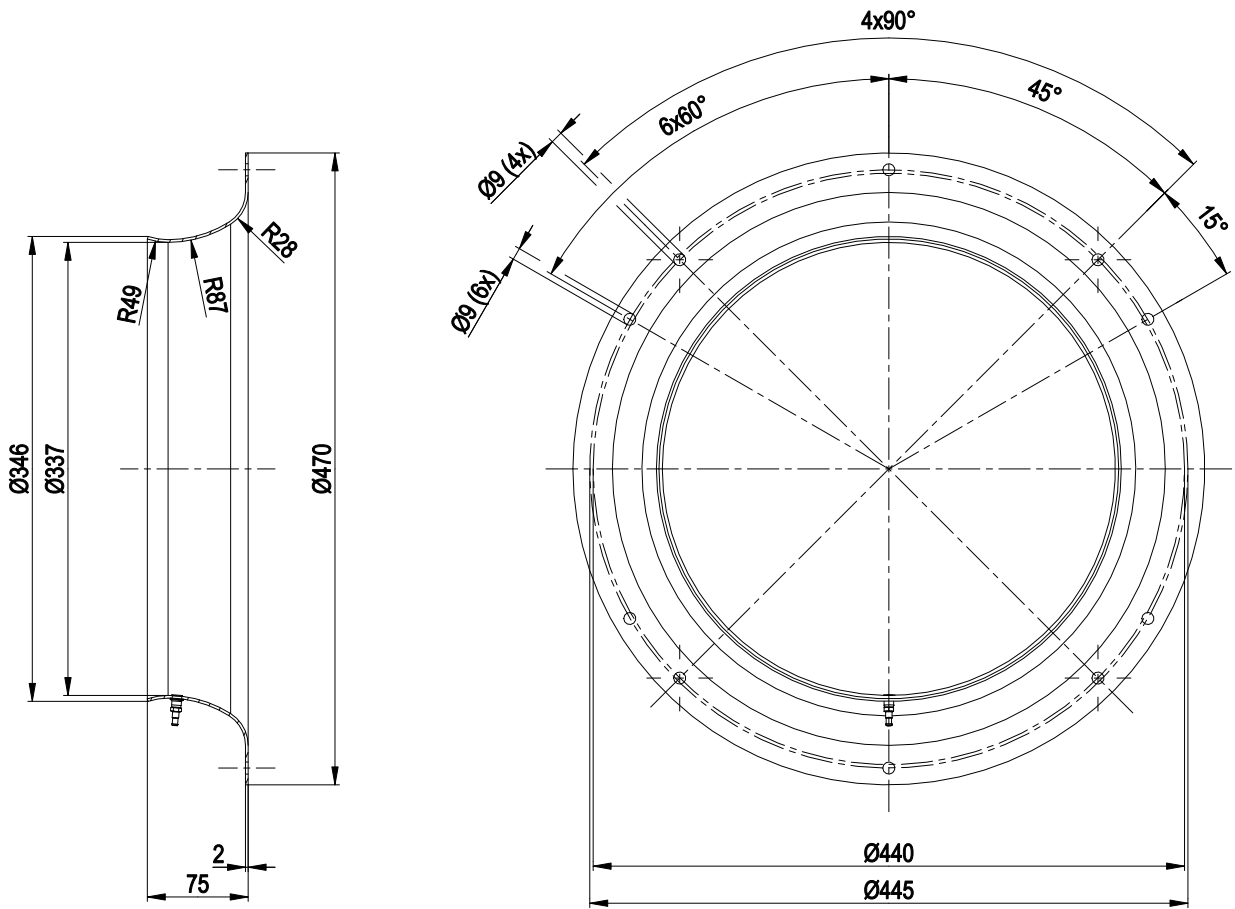
1	Accessory part: inlet ring 64025-2-4013 with pressure tap (k-factor: 281) not included in scope of delivery
2	Max. clearance for screw 20 mm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
4	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
5	Tightening torque 3.5 ± 0.5 Nm



EC centrifugal fan

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Accessory part



Inlet ring 64025-2-4013 with pressure tap 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 k Ω , adjustable curve, only usable as alternative to input Ain1 I; SELV
KL 3	5	+ 10 V	Fixed voltage output 10 VDC, +10 V \pm 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 k Ω , adjustable curve, only usable as alternative to input Ain2I; SELV
KL 3	12	+ 20 V	Fixed voltage output 20 VDC, +20 V \pm 5/-10%, max. 50 mA, short-circuit-proof power supply for external devices (e.g. sensors); SELV

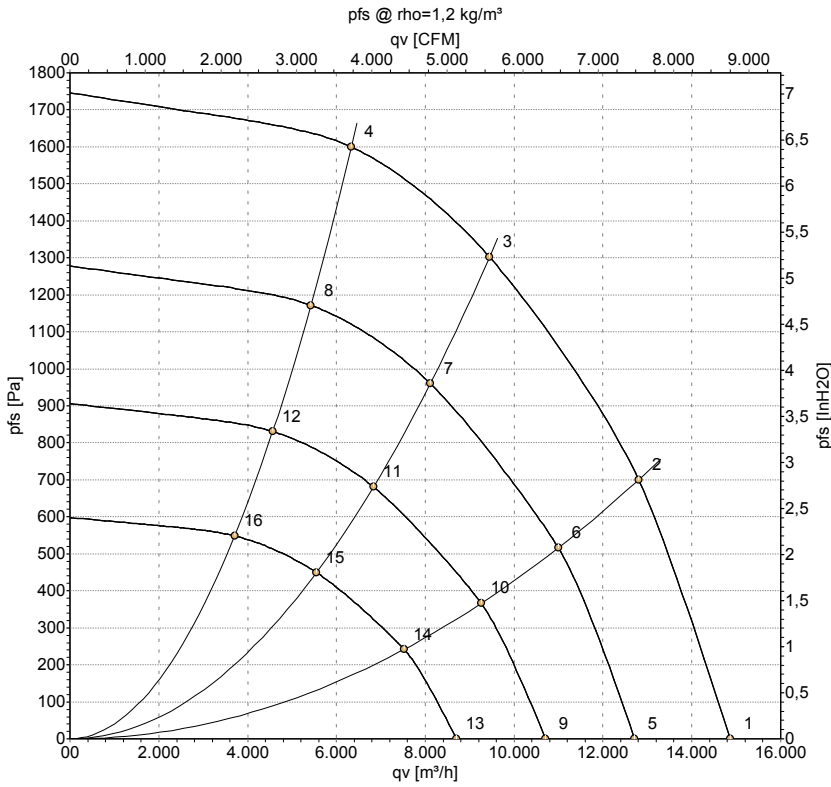
EC centrifugal fan

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-154616-1

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 _{ed}	I	LpA _{in}	LwA _{in}	LwA _{out}	qv	P _{fs}	qv	P _{fs}
	V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	m ³ /h	Pa	CFM	inH ₂ O
1	400	50	2200	3572	5.59	91	98	103	14865	0	8750	0.00
2	400	50	2200	4781	7.38	84	92	98	12805	700	7535	2.81
3	400	50	2200	5400	8.30	81	88	94	9445	1300	5560	5.22
4	400	50	2200	5119	7.90	84	92	97	6335	1600	3730	6.42
5	400	50	1900	2233	3.50	87	94	99	12710	0	7480	0.00
6	400	50	1900	3026	4.67	80	88	94	10995	516	6470	2.07
7	400	50	1900	3413	5.27	77	85	91	8115	965	4775	3.87
8	400	50	1900	3207	4.95	80	88	93	5420	1177	3190	4.73
9	400	50	1600	1334	2.09	83	90	95	10705	0	6300	0.00
10	400	50	1600	1807	2.79	76	84	90	9260	366	5450	1.47
11	400	50	1600	2038	3.15	73	80	86	6830	685	4020	2.75
12	400	50	1600	1915	2.95	76	84	88	4565	835	2685	3.35
13	400	50	1300	715	1.12	78	85	90	8695	0	5120	0.00
14	400	50	1300	969	1.50	71	79	84	7520	242	4425	0.97
15	400	50	1300	1093	1.69	67	75	81	5550	452	3265	1.81
16	400	50	1300	1027	1.58	71	78	83	3710	551	2185	2.21

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
 LwA_{out} = Sound power level outlet side · qv = Air flow · p_{fs} = Pressure increase

