EC centrifugal fan - RadiPac

backward-curved, single-intake

R3G560-PC09-17 ebmpapst Datasheet
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Nominal data

Type	**R3G560-PC09-17**
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}	1880
Power consumption	W	5950
Current draw	A	9.1
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

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 η_{es}	%	68.3	59.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		70.6	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	6.02
09 Air flow q_v	m^3/h	12410
09 Pressure increase p_{fs}	Pa	1157
10 Speed (rpm) n	min^{-1}	1890
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-201116

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Technical description

Weight	39.3 kg
Size	560 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP20
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
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 for slave 0-10 V - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC - 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 61000-6-4 (industrial environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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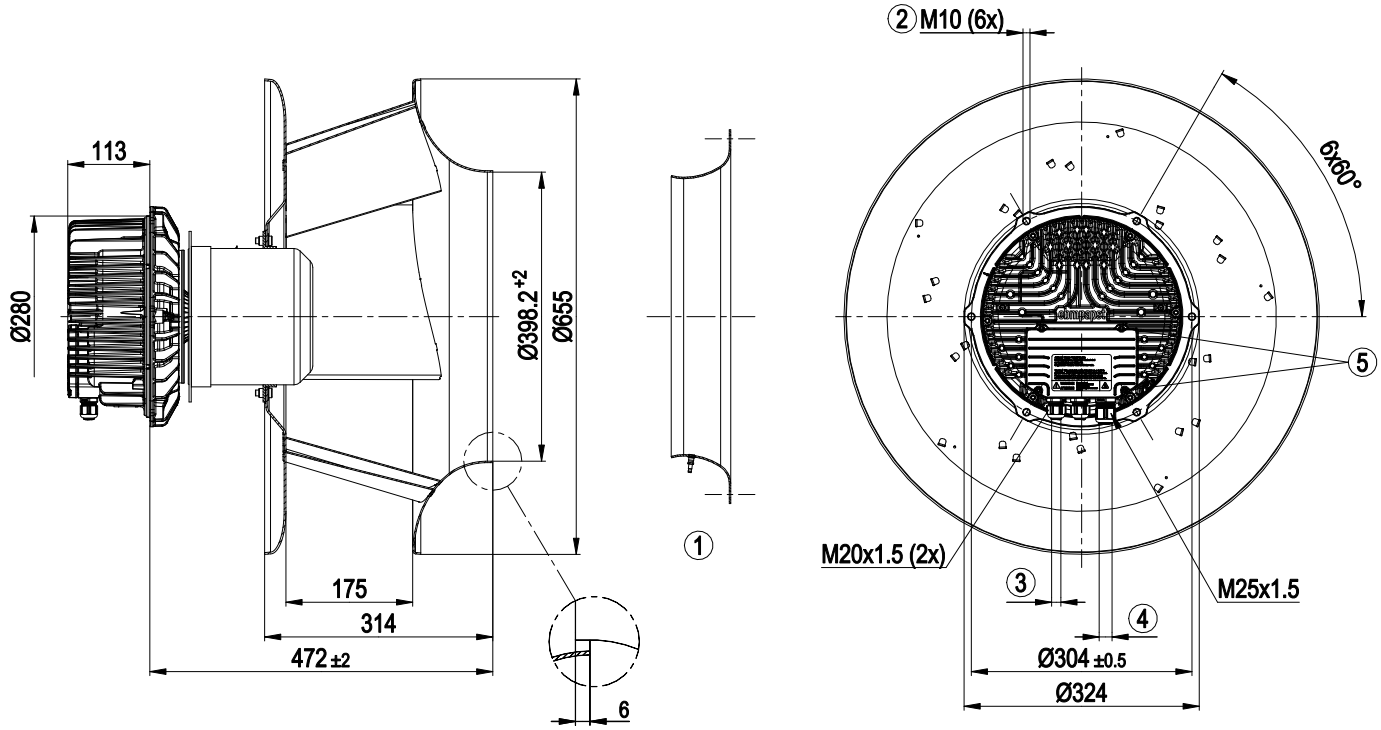
Product drawing



1	Accessory part: Inlet ring 64030-2-4013 with pressure tap (k-factor: 348) 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±0.4 Nm
4	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6±0.6 Nm
5	Tightening torque 3.5 ± 0.5 Nm

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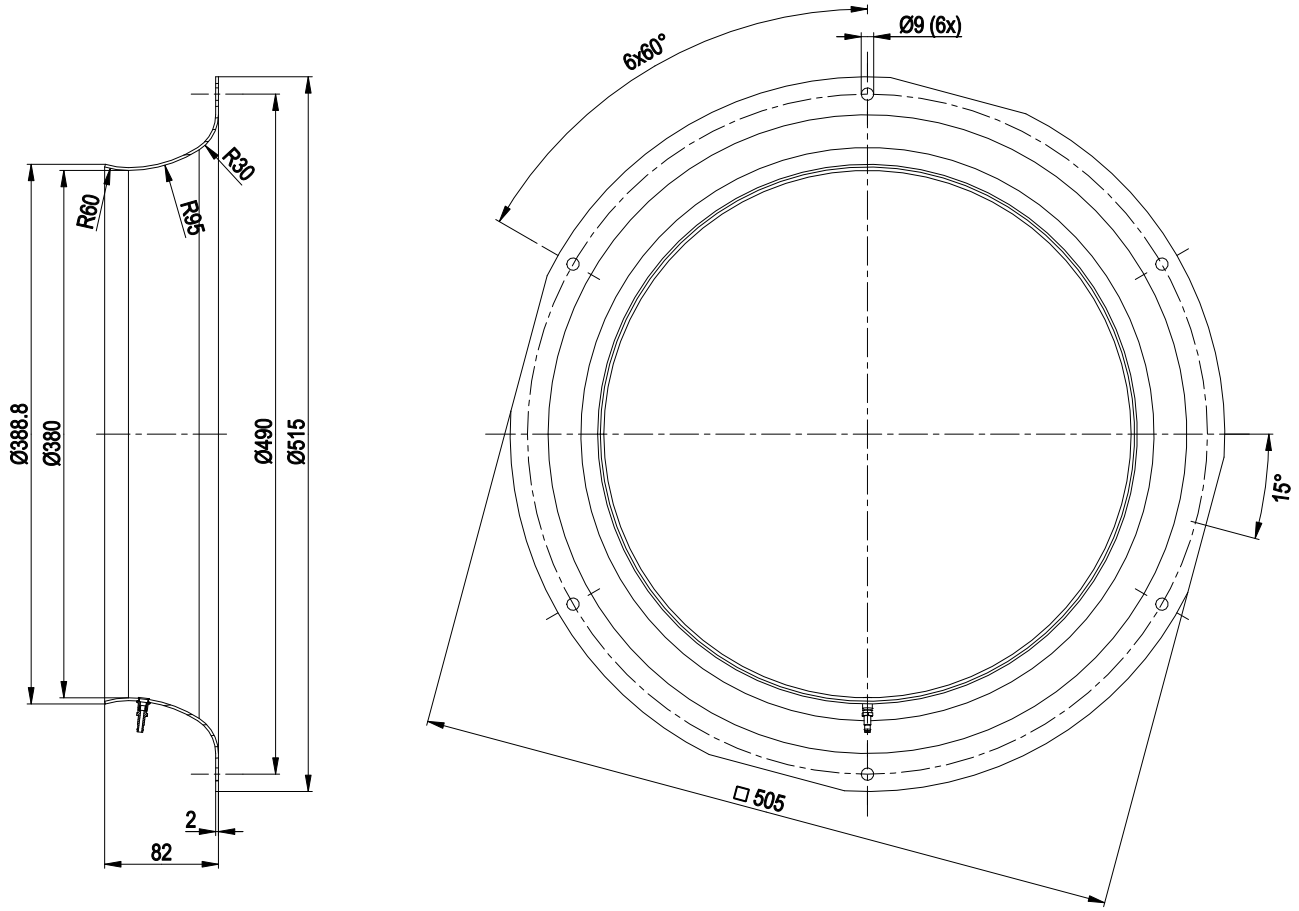
Accessory part



Inlet ring 64030-2-4013 with pressure tap not included in scope of delivery

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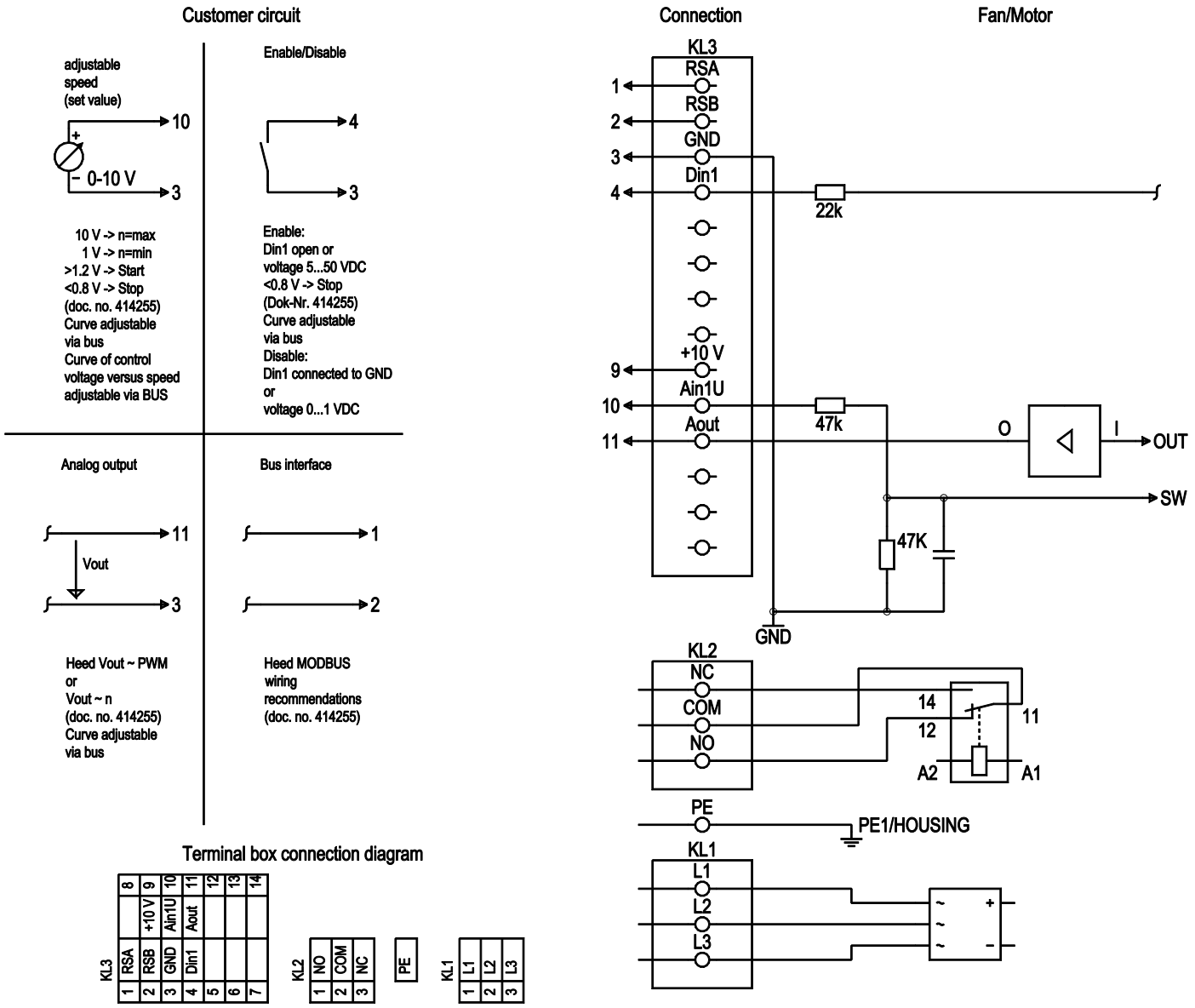
Connection diagram



No.	Conn.	Designation	Function/assignment
KL 1	1, 2, 3	L1, L2, L3	Power supply, phase, see nameplate for voltage range
PE	PE	PE	Protective earth
KL2	1	NO	Status relay, floating status contact, option 1: make for failure, option 2: make for error for run monitor
KL2	2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side
KL2	3	NC	Status relay, floating status contact, option 1: break for failure, option 2: break for error message for run monitor
KL 3	1	RSA	RS485 interface for MODBUS, RSA; SELV
KL 3	2	RSB	RS485 interface for MODBUS, RSB; SELV
KL 3	3	GND	Reference ground for control interface; SELV
KL 3	4	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC voltage < 1 VDC reset after a level change to < 1 VDC; SELV

No.	Conn.	Designation	Function/assignment
KL 3	-	-	-
KL 3	-	-	-
KL3	-	-	-
KL3	-	-	-
KL 3	9	10 V / max. 10 mA	Voltage output, power supply for external devices (e.g. potentiometers), SELV
KL 3	10	Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve; SELV
KL 3	11	Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV
KL 3	-	-	-
KL 3	-	-	-
KL 3	-	-	-

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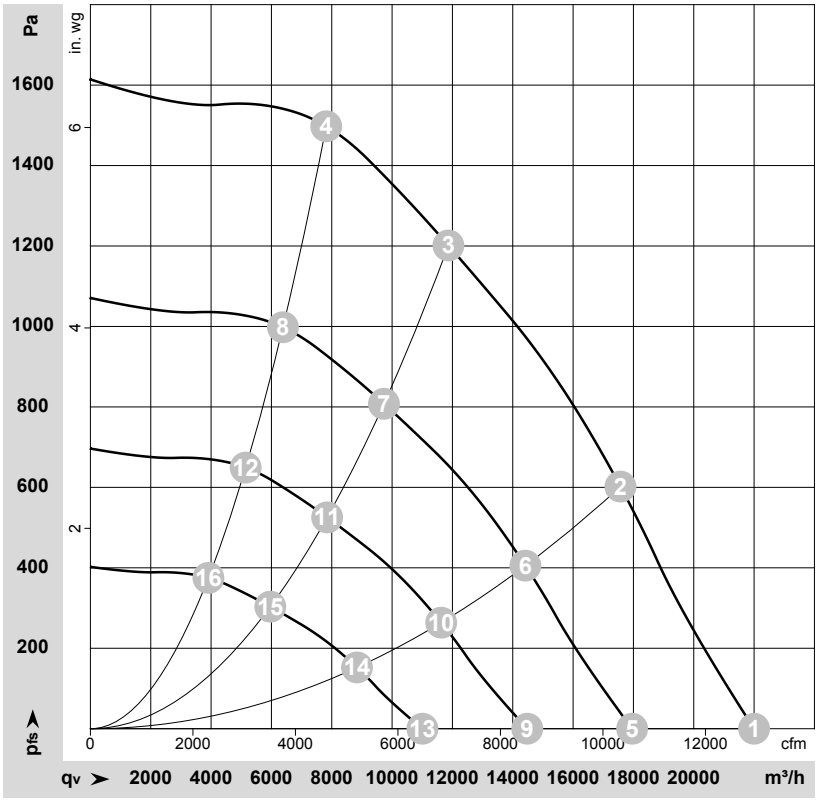
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-201116-1

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	LpA_{in}	LwA_{in}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	3~	400	50	1880	3391	5.28	99	106	105	22000	0	12950	0.00
2	3~	400	50	1880	5157	7.90	92	98	98	17570	600	10340	2.41
3	3~	400	50	1880	5950	9.10	79	86	91	11865	1200	6985	4.82
4	3~	400	50	1880	5650	8.63	84	90	95	7815	1500	4600	6.02
5	3~	400	50	1550	1844	2.87	94	101	100	17955	0	10570	0.00
6	3~	400	50	1550	2849	4.36	87	93	93	14420	409	8485	1.64
7	3~	400	50	1550	3314	5.06	74	81	86	9730	808	5725	3.24
8	3~	400	50	1550	3072	4.69	78	85	90	6380	1004	3755	4.03
9	3~	400	50	1250	967	1.51	89	96	94	14480	0	8525	0.00
10	3~	400	50	1250	1494	2.29	82	88	88	11630	266	6845	1.07
11	3~	400	50	1250	1738	2.65	69	75	80	7845	526	4620	2.11
12	3~	400	50	1250	1611	2.46	73	80	85	5145	653	3030	2.62
13	3~	400	50	950	425	0.66	82	89	88	11005	0	6480	0.00
14	3~	400	50	950	656	1.00	75	81	81	8835	154	5200	0.62
15	3~	400	50	950	763	1.17	62	68	73	5965	304	3510	1.22
16	3~	400	50	950	707	1.08	66	73	78	3910	377	2300	1.51

Wired = Wiring · U = Voltage · 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 · q_V = Air flow · p_{fs} = Pressure increase