EC centrifugal module - RadiPac

backward-curved, single-intake

with support bracket

K3G280-AU11-F1 ebmpapst Datasheet
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www.fansco.com

Nominal data

Type	**K3G280-AU11-F1**
Motor	**M3G084-GF**

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}	3100
Power consumption	W	1000
Current draw	A	1.6
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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	61.4	51.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		71.9	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.99
09 Air flow q_v	m^3/h	2675
09 Pressure increase p_{fs}	Pa	758
10 Speed (rpm) n	min^{-1}	3115
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-130335

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Technical description

Weight	10.9 kg
Size	280 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
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 - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - Alarm relay - Power limiter - Motor current limitation - 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
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	Connector with cable
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	UL 1004-7 + 60730; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1

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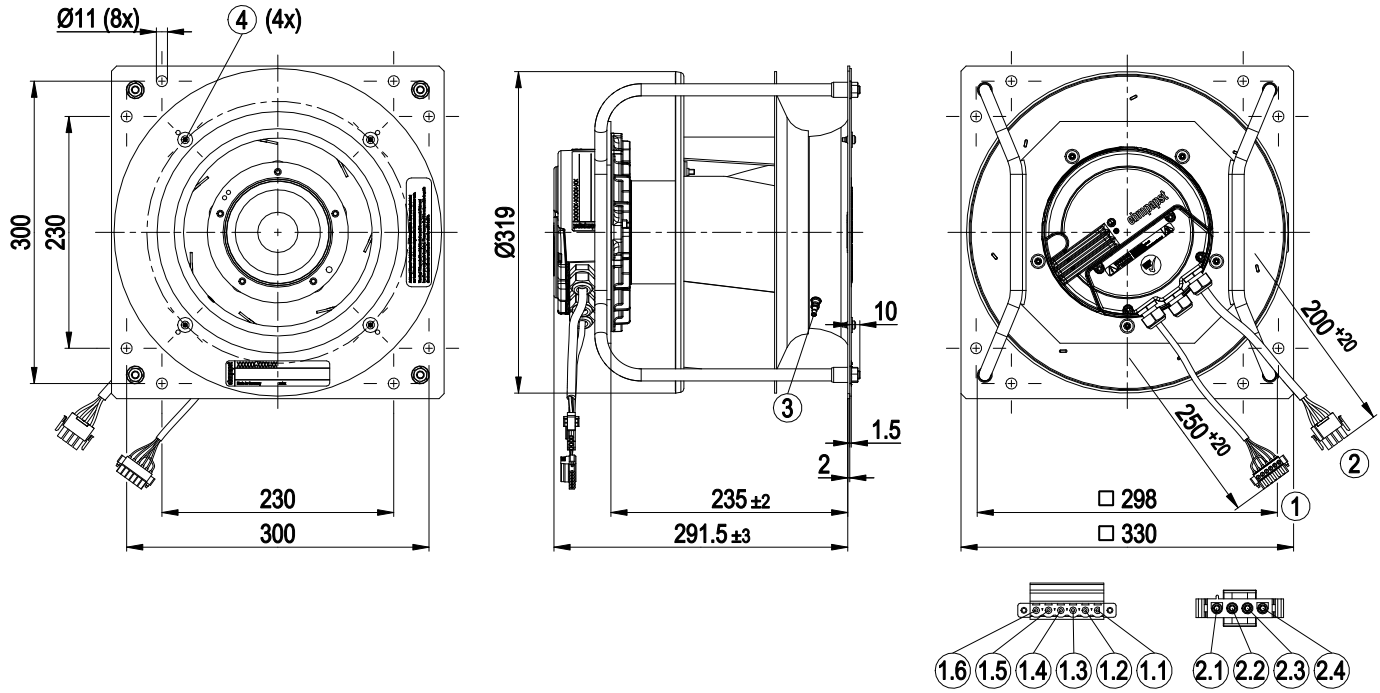
Product drawing



1	Cable PVC AWG22
	6-pole connector housing Phoenix 1778027 (MSTB 2.5/6-STF-5.08), 6x wire-end ferrules
1.1	RSA
1.2	RSB
1.3	GND
1.4	0-10 V
1.5	+10 V
1.6	Bridge (GND)
2	Cable PVC AWG18
	4-pole connector housing TE 1-480702-0, 2x plug pin TE 926883-1, 1x plug pin TE 350654-1
2.1	PE
2.2	L3
2.3	L2
2.4	L1
3	Inlet ring with pressure tap (k-factor: 93)
4	Attachment for inlet ring and FlowGrid

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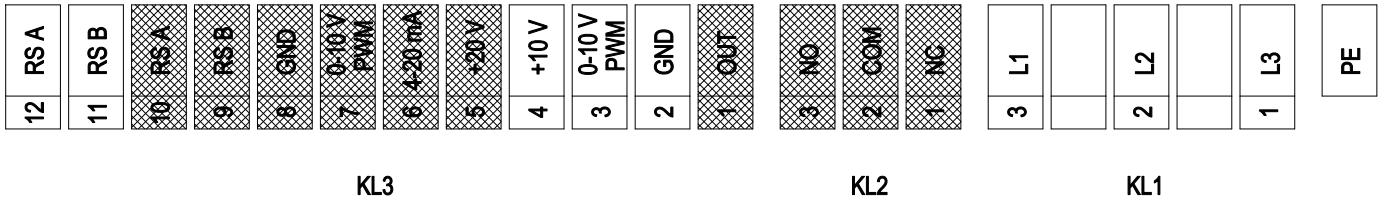
Connection diagram



shaded gray => not brought out via leads

No.	Conn.	Designation	Function/assignment
1	-	PE	Protective earth terminal
1	KL1	L1	Supply connection, power supply, phase, voltage range see nameplate, 50/60 Hz
1	KL1	L2	Supply connection, power supply, phase, voltage range see nameplate, 50/60 Hz
1	KL1	L3	Supply connection, power supply, phase, voltage range see nameplate, 50/60 Hz
-	KL2	NC	Floating status contact, break for failure
-	KL2	COM	Floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
-	KL2	NO	Floating status contact, make for failure
-	KL3	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
2	KL3	GND	Reference ground for control interface, SELV
2	KL3	0-10 V / PWM	Use control / current sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input; SELV
2	KL3	+10 V	Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer); SELV
-	KL3	+20 V	Voltage output 20 VDC (+25/-10%), max. 50 mA power supply for external devices (e.g. sensors); SELV
-	KL3	4-20 mA	Use control / current sensor value input 4-20 mA, impedance 100 Ω only as alternative to 0-10 V input; SELV
-	KL3	0-10 V / PWM	Use control / current sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input; SELV
-	KL3	GND	Reference ground for control interface, SELV
-	KL3	RSB	RS485 interface for MODBUS, RSB
-	KL3	RSA	RS485 interface for MODBUS, RSA
2	KL3	RSB	RS485 interface for MODBUS, RSB
2	KL3	RSA	RS485 interface for MODBUS, RSA

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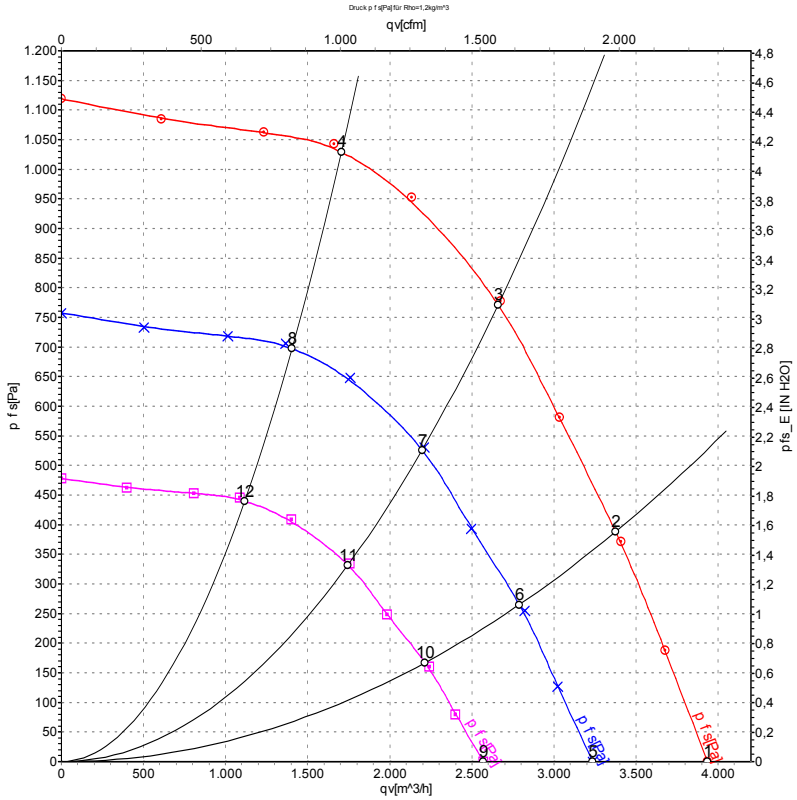
Curves: Air performance 50 Hz



Measurement: LU-130335-1

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

	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	400	50	3100	645	1.04	78	86	93	3935	0	2315	0.00
2	400	50	3100	852	1.35	75	83	90	3375	390	1985	1.57
3	400	50	3100	1000	1.60	72	80	86	2660	775	1565	3.11
4	400	50	3100	921	1.46	76	83	89	1705	1030	1005	4.14
5	400	50	2575	358	0.58	74	82	88	3235	0	1905	0.00
6	400	50	2575	482	0.76	71	79	85	2790	269	1640	1.08
7	400	50	2575	562	0.89	68	76	82	2195	534	1295	2.14
8	400	50	2575	514	0.82	71	79	84	1405	700	825	2.81
9	400	50	2045	180	0.29	69	77	83	2570	0	1515	0.00
10	400	50	2045	242	0.38	66	74	80	2215	170	1305	0.68
11	400	50	2045	282	0.45	63	71	77	1745	337	1025	1.35
12	400	50	2045	257	0.41	66	74	79	1115	442	655	1.77

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