EC centrifugal module - RadiCal

backward curved, single inlet

with support bracket

K3G280-RR03-H6 ebmpapst Datasheet
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Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

Nominal data

Type	**K3G280-RR03-H6**
Motor	**M3G084-DF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	2700
Power input	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data according to ErP directive

		Actual	Request 2015
01 Overall efficiency η_{es}	%	67.3	48.4
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		80.9	62
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	0.51
09 Air flow q_v	m^3/h	2105
09 Pressure increase p_{fs}	Pa	535
10 Speed (rpm) n	min^{-1}	2695
11 Specific ratio*		1.01

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

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Technical features

Mass	8.16 kg
Size	280 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	PP plastic
Material of mounting plate	Sheet steel, galvanised
Material of support bracket	Steel, coated in black
Material of inlet nozzle	Sheet steel, galvanised
Number of blades	6
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 55
Insulation class	"F"
Humidity (F)/environmental protection class (H)	H1
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensate discharge holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - Alarm relay - Integrated PID controller - Output limit - Motor current limit - PFC, active - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
EMC interference immunity	Acc. to EN 61000-6-2 (industrial environment)
EMC harmonics	Acc. to EN 61000-3-2/3
EMC interference emission	Acc. to EN 61000-6-3 (household environment)
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical leads	With plug
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Variable
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	C22.2 Nr.77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730

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Remark	Perm. operating altitude up to max. 4000 m above sea level as per DIN 61800-5-1_2008_Sect. 4.3.6.4.1 Overvoltage category II. Up to 2000 m above sea level Overvoltage category III applies.

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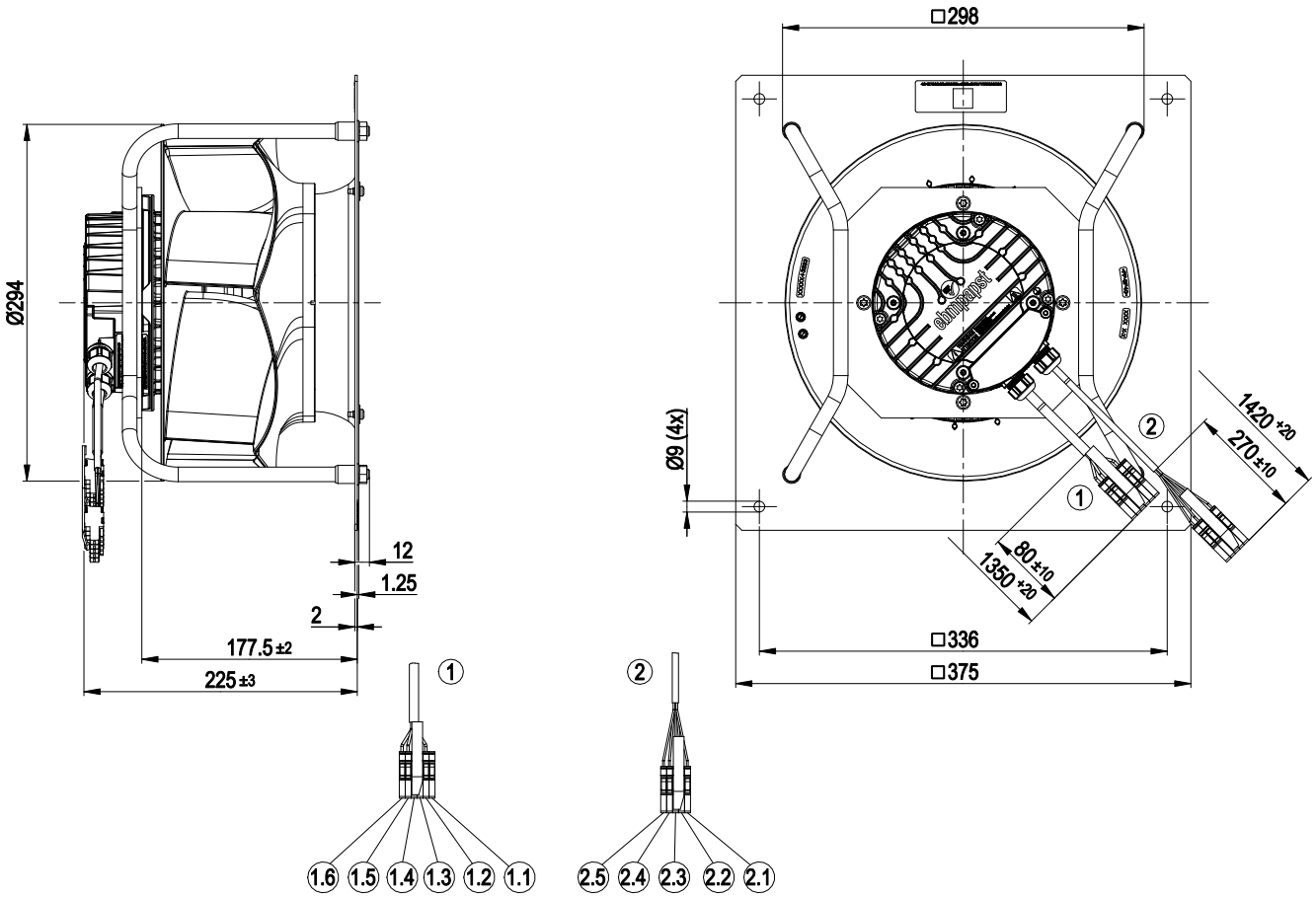
Product drawing



1	Connection line PVC AWG18 with 6x Phoenix connector housing
1.1	Connector housing 3210062 Phoenix - not used
1.2	Connector housing 3210091 Phoenix - COM - white2
1.3	Connector housing 3210091 Phoenix - NC - white1
1.4	Connector housing 3210114 Phoenix - PE - green/yellow
1.5	Connector housing 3210091 Phoenix - N - blue
1.6	Connector housing 3210127 Phoenix - L - black
2	Connection line PVC AWG22 with 5x Phoenix connector housing
2.1	Connector housing 3212659 Phoenix - RSB - black4
2.2	Connector housing 3212688 Phoenix - RSA - black3
2.3	Connector housing 3212688 Phoenix - not used
2.4	Connector housing 3212688 Phoenix - 0-10 V - black2
2.5	Connector housing 3212714 Phoenix - GND - black1

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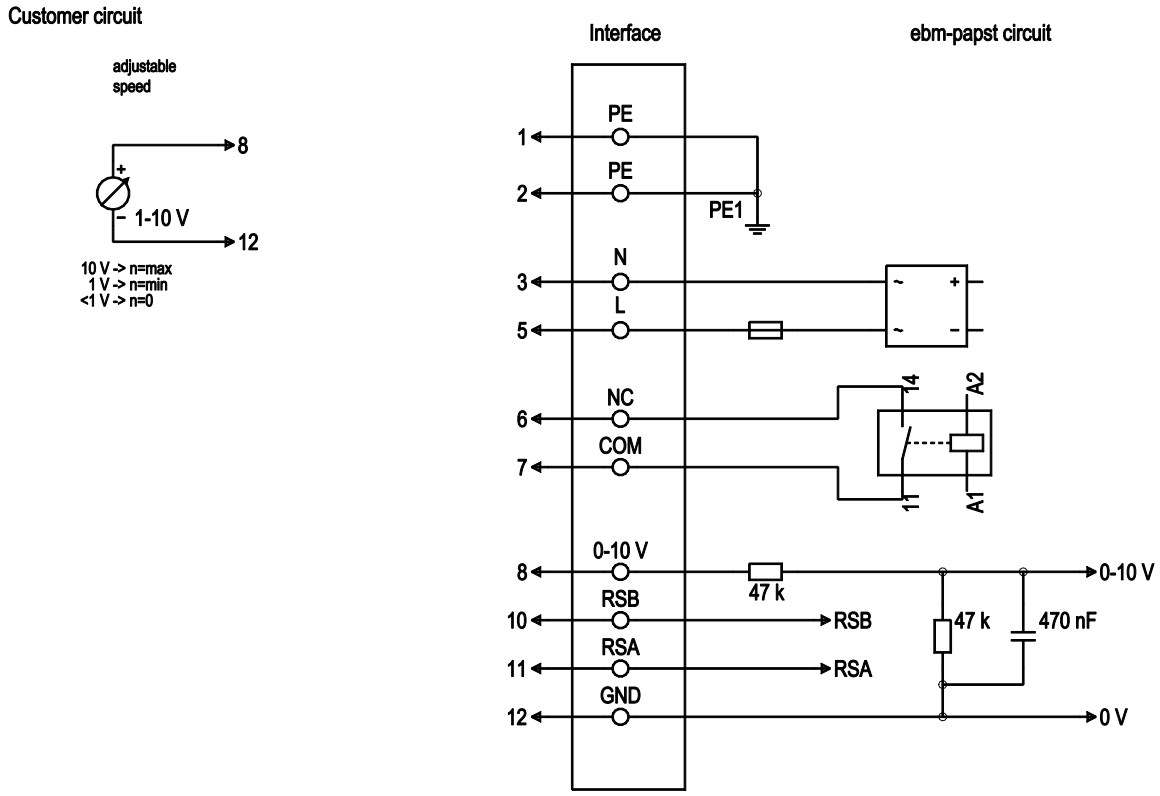
Connection screen



No.	Conn.	Designation	Colour	Function / assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC/2 A (AC1) min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact; common connection, contact rating 250 VAC/2 A (AC1) min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side
2	8	0-10V	black 2	Analogue input (set value); 0-10 V; Ri=100 kΩ; parametrisable curve
2	10	RSB	black 4	RS-485 interface for MODBUS, RSB
2	11	RSA	black 3	RS-485 interface for MODBUS, RSA
2	12	GND	black 1	Signal ground for control interface, SELV

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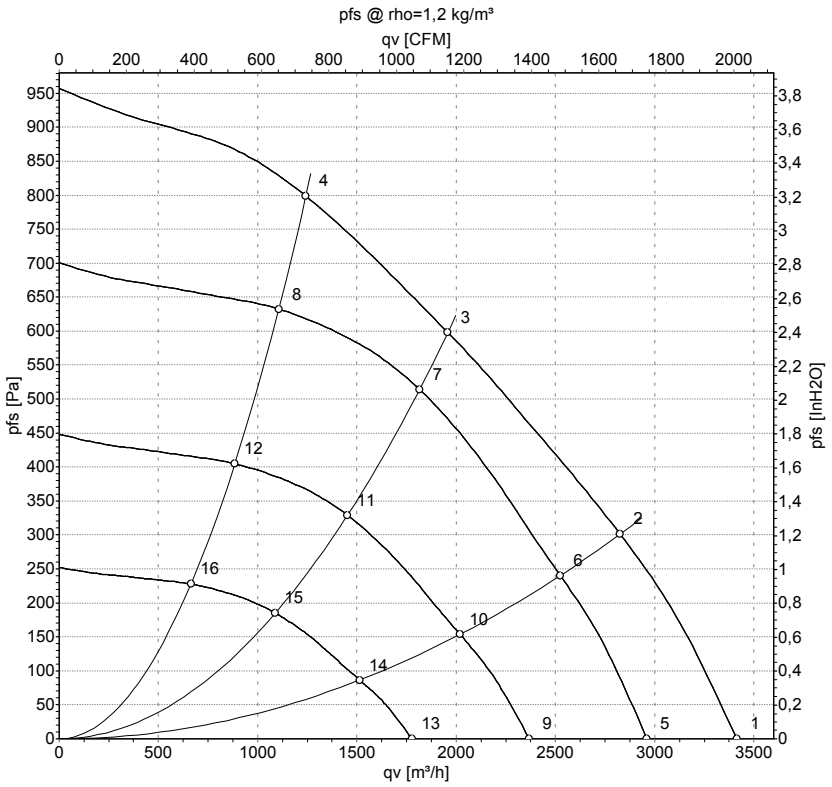
Charts: Air flow 50 Hz



Measurement: LU-149673-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	U	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	inH2O
1	230	50	2880	460	2.00	77	85	3415	0	2010	0.00
2	230	50	2800	500	2.20	73	80	2825	300	1665	1.20
3	230	50	2700	500	2.20	66	74	1960	600	1150	2.41
4	230	50	2810	500	2.20	70	78	1245	800	730	3.21
5	230	50	2500	300	1.31	74	81	2960	0	1745	0.00
6	230	50	2500	366	1.60	70	77	2525	240	1485	0.96
7	230	50	2500	410	1.78	64	72	1815	514	1070	2.06
8	230	50	2500	362	1.58	67	75	1105	633	650	2.54
9	230	50	2000	154	0.67	68	76	2370	0	1395	0.00
10	230	50	2000	187	0.82	64	71	2020	154	1190	0.62
11	230	50	2000	210	0.91	58	66	1450	329	855	1.32
12	230	50	2000	185	0.81	62	69	885	405	520	1.63
13	230	50	1500	65	0.28	61	68	1775	0	1045	0.00
14	230	50	1500	79	0.34	57	64	1515	86	890	0.35
15	230	50	1500	89	0.39	51	59	1090	185	640	0.74
16	230	50	1500	78	0.34	55	62	665	228	390	0.92

U = Supply voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · q_V = Air flow p_{fs} = Pressure increase