VBH0400RSPKS K3G400RS03V1

EC centrifugal module - RadiCal

backward-curved, single-intake

with support bracket

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Nominal data

Type	**VBH0400RSPKS**
Motor	**M3G084-FA**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1500
Power consumption	W	500
Current draw	A	2.2
Min. ambient temperature	°C	-25
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 Commission Regulation (EU) 327/2011

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	66.7	48.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		80.2	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.52
09 Air flow q_v	m^3/h	3200
09 Pressure increase p_{fs}	Pa	353
10 Speed (rpm) n	min^{-1}	1495
11 Specific ratio*		1.00

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

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Technical description

Size	400 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Flowgrid material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
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 - Operation and alarm display - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - 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
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (if protective earth is connected by customer to the housing's connection point)
Conformity with standards	EN 61800-5-1; EN 60335-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; CCC; EAC; UL 1004-7 + 60730-1

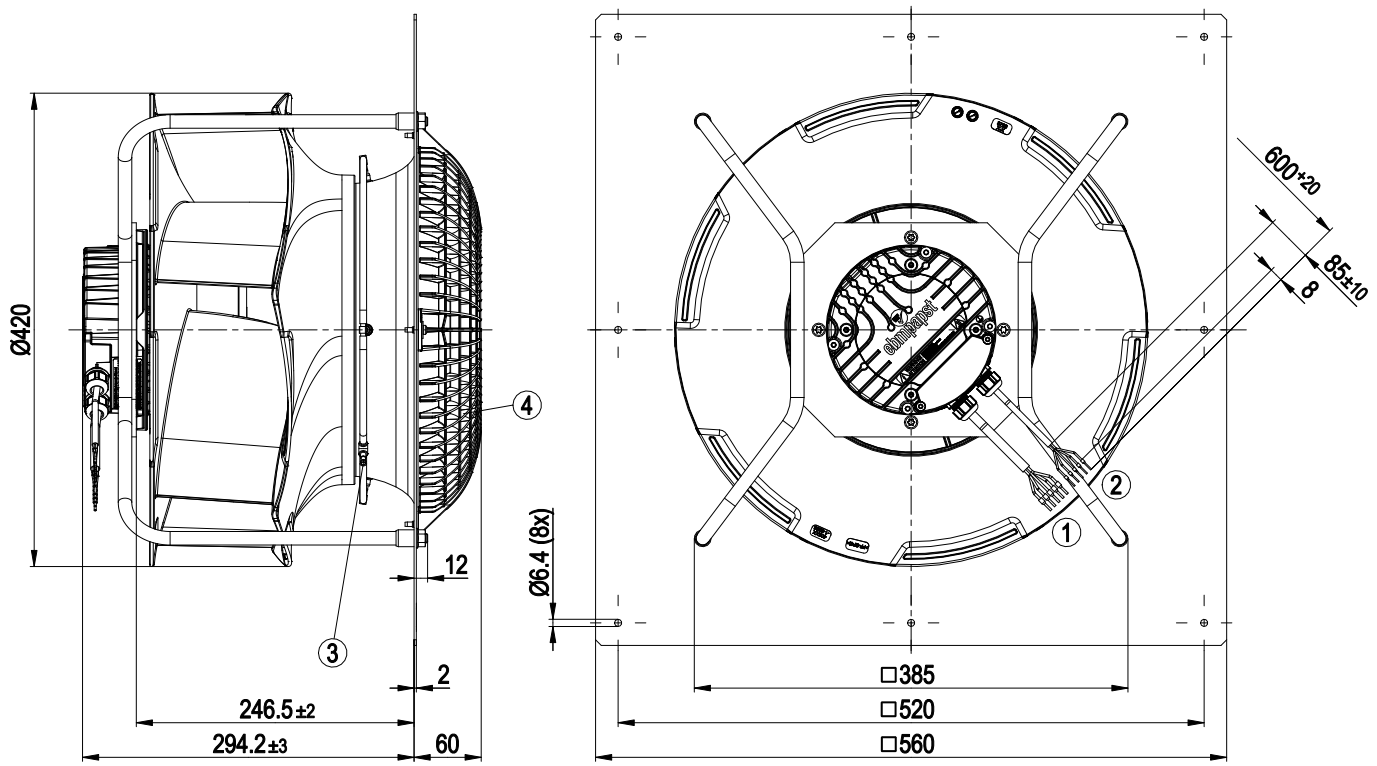
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Product drawing



1	Cable PVC AWG18
	5x wire-end ferrule
2	Cable PVC AWG22
	5x wire-end ferrule
3	Inlet ring with ring line (k-factor: 180)
4	FlowGrid

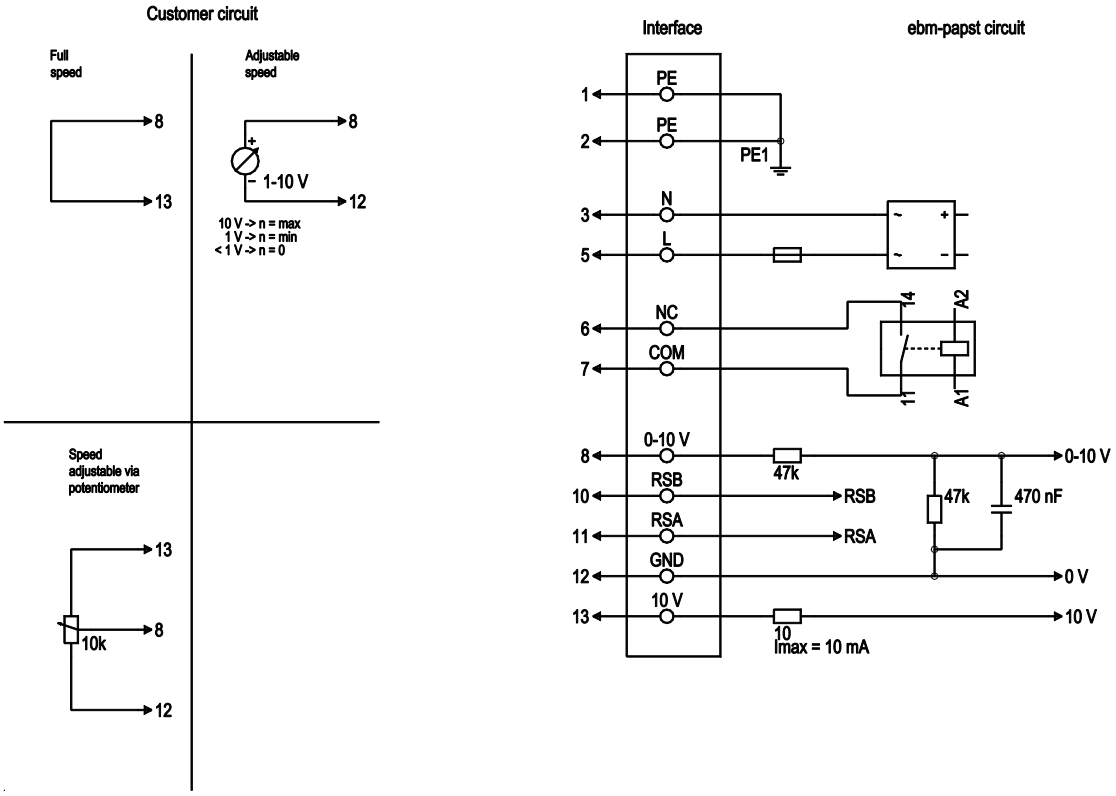
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Connection diagram



No.	Conn.	Designation	Color	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 / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
1	7	COM	white 2	Status relay, floating status contact; common connection, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
2	8	0-10V	yellow	Analog input (set value); 0-10 V; Ri = 100 kΩ; adjustable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB
2	11	RSA	white	RS485 interface for MODBUS, RSA
2	12	GND	blue	Reference ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V ±3%; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. pot)

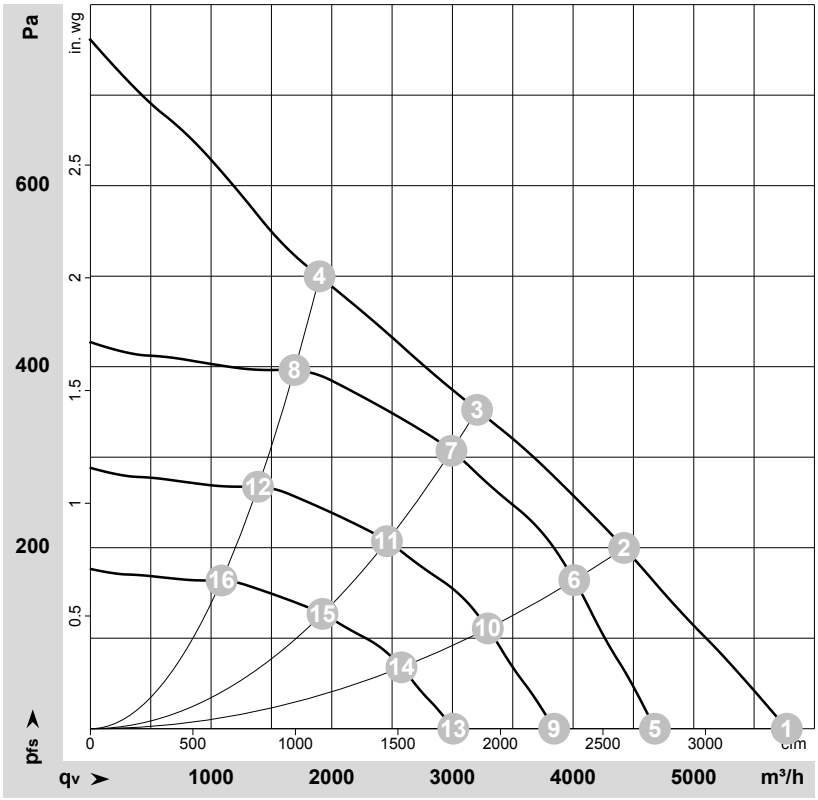
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-150868-1

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}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	1~	230	50	1725	500	2.20	73	80	5770	0	3395	0.00
2	1~	230	50	1545	500	2.20	66	73	4425	200	2605	0.80
3	1~	230	50	1500	500	2.20	60	67	3205	350	1885	1.41
4	1~	230	50	1570	500	2.20	64	73	1900	500	1120	2.01
5	1~	230	50	1400	277	1.21	67	75	4680	0	2755	0.00
6	1~	230	50	1400	386	1.68	64	71	4010	166	2360	0.67
7	1~	230	50	1400	427	1.86	58	66	2990	309	1760	1.24
8	1~	230	50	1400	369	1.61	61	69	1690	397	995	1.59
9	1~	230	50	1150	153	0.67	63	70	3845	0	2260	0.00
10	1~	230	50	1150	214	0.93	59	66	3295	112	1940	0.45
11	1~	230	50	1150	237	1.03	53	61	2460	209	1445	0.84
12	1~	230	50	1150	204	0.89	56	64	1390	268	820	1.08
13	1~	230	50	900	74	0.32	56	64	3005	0	1770	0.00
14	1~	230	50	900	102	0.45	52	59	2580	69	1515	0.28
15	1~	230	50	900	113	0.49	47	55	1925	128	1130	0.51
16	1~	230	50	900	98	0.43	50	58	1085	164	640	0.66

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
q_V = Air flow · p_{fs} = Pressure increase

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