

EC centrifugal module - RadiCal

backward-curved, single-intake
with support bracket

ebm-papst Mulfingen GmbH & Co. KG

Bachmühle 2 · D-74673 Mulfingen

Phone +49 7938 81-0

Fax +49 7938 81-110

info1@de.fansco.com

www.fansco.com

Limited partnership · Headquarters Mulfingen

Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen

Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	K3G500-RK55-21	
Motor	M3G112-GA	
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	1100
Power consumption	W	750
Current draw	A	3.3
Min. ambient temperature	°C	-40
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 (prEN 17166)

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	63.4	50.2	09 Power consumption P_{ed}	kW	0.74
02 Measurement category		A		09 Air flow q_v	m ³ /h	5025
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	308
04 Efficiency grade N		75.2	62	10 Speed (rpm) n	min ⁻¹	1100
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

* Specific ratio = $1 + p_b / 100\,000\text{ Pa}$

LU-152129

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.
The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

Technical description

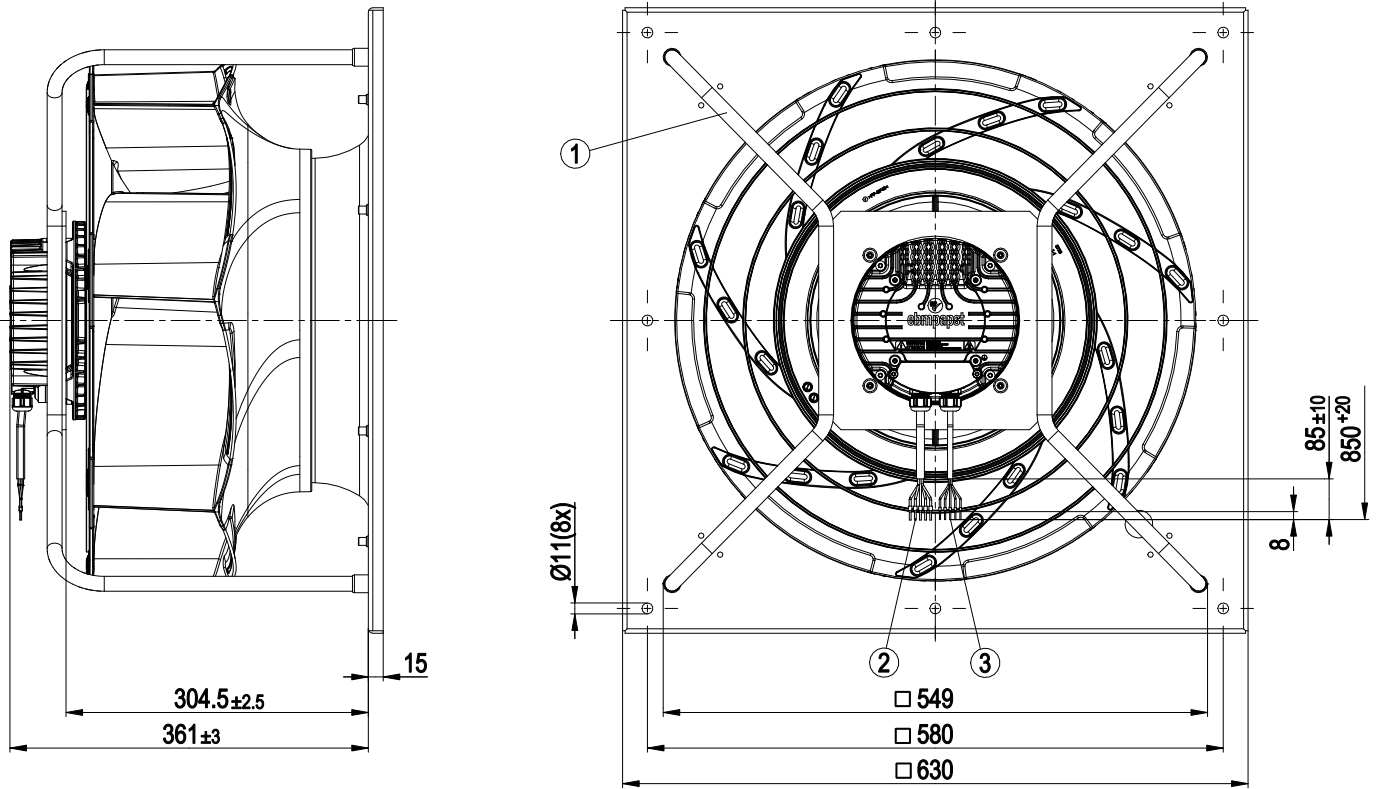
Weight	23 kg
Size	500 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at temperatures below -25°C (e.g. refrigeration applications) we recommend our 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	See product drawing
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
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal switch auto reset, internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

EC centrifugal module - RadiCal

backward-curved, single-intake

with support bracket

Product drawing



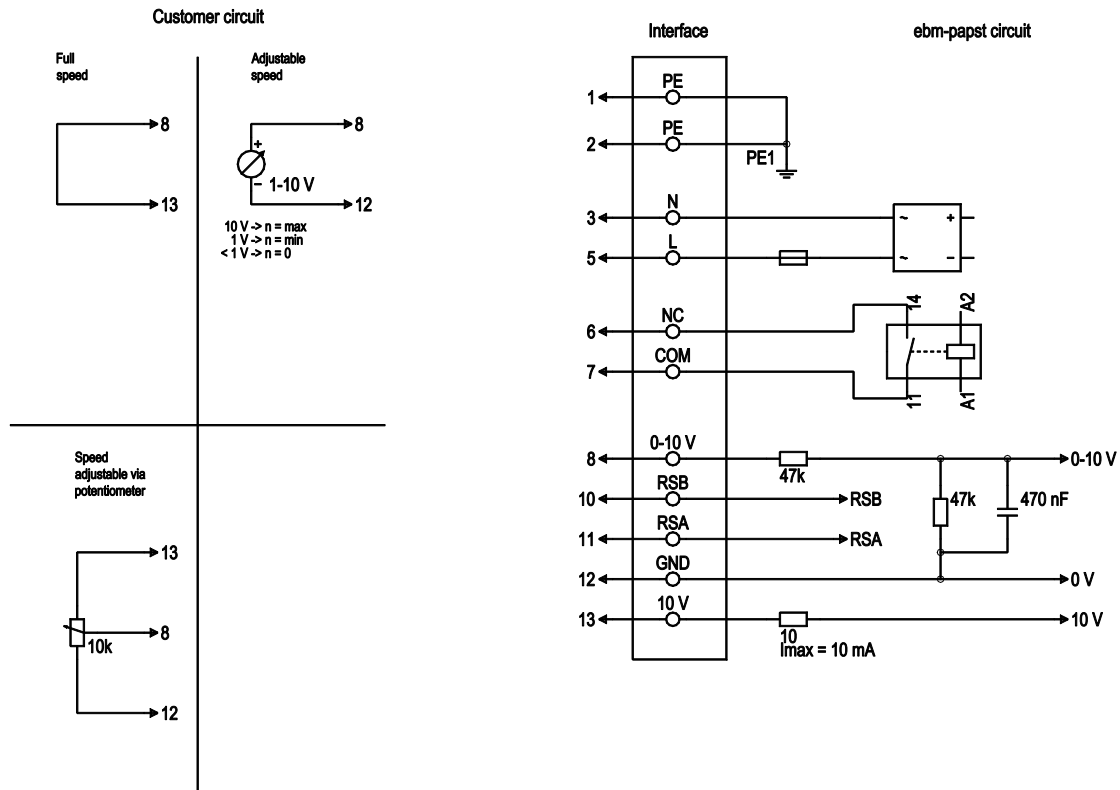
- | | |
|---|--|
| 1 | Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request |
| 2 | Cable PVC AWG18, 5x crimped ferrules |
| 3 | Cable PVC AWG22, 5x crimped ferrules |

EC centrifugal module - RadiCal

backward-curved, single-intake

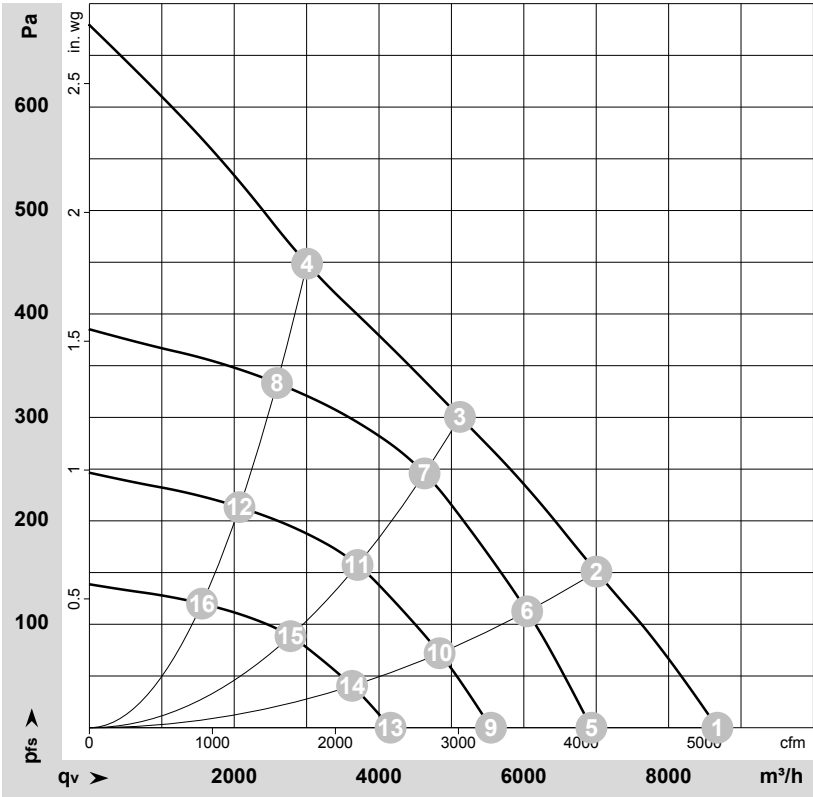
with support bracket

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; $R_i = 100 \text{ k}\Omega$; 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 $\pm 3\%$; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. pot)

Curves: Air performance 50 Hz



$\rho = 1.18 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-152129-1
Date: 2013-01-02
Nozzle: 50901-2-2943

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)	m³/h	Pa	cfm	in. wg
1	1~	230	50	1250	743	3.30	70	77	84	8675	0	5105	0.00
2	1~	230	50	1155	750	3.30	66	73	79	7005	150	4120	0.60
3	1~	230	50	1100	750	3.30	60	67	73	5120	300	3010	1.20
4	1~	230	50	1155	746	3.30	62	69	74	3005	450	1770	1.81
5	1~	230	50	1000	379	1.68	65	72	78	6935	0	4080	0.00
6	1~	230	50	1000	488	2.16	62	69	76	6045	114	3560	0.46
7	1~	230	50	1000	558	2.48	57	65	70	4630	249	2725	1.00
8	1~	230	50	1000	483	2.14	58	66	70	2590	334	1525	1.34
9	1~	230	50	800	194	0.86	59	66	72	5545	0	3265	0.00
10	1~	230	50	800	250	1.11	57	64	70	4835	73	2845	0.29
11	1~	230	50	800	286	1.27	51	59	65	3705	159	2180	0.64
12	1~	230	50	800	247	1.10	52	60	65	2075	214	1220	0.86
13	1~	230	50	600	82	0.36	52	59	65	4160	0	2450	0.00
14	1~	230	50	600	105	0.47	49	56	63	3630	41	2135	0.16
15	1~	230	50	600	121	0.54	44	52	57	2775	90	1635	0.36
16	1~	230	50	600	104	0.46	45	53	57	1555	120	915	0.48

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