R3G450-FT11-I1

EC centrifugal fan - RadiCal

backward-curved, single-intake

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Nominal data

Type	**R3G450-FT11-I1**
Motor	**M3G084-GF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min^{-1}	1460
Power consumption	W	750
Current draw	A	3.4
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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	67.5	50.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		79.3	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.75
09 Air flow q_v	m^3/h	5070
09 Pressure increase p_{fs}	Pa	332
10 Speed (rpm) n	min^{-1}	1460
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-208665

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).

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Technical description

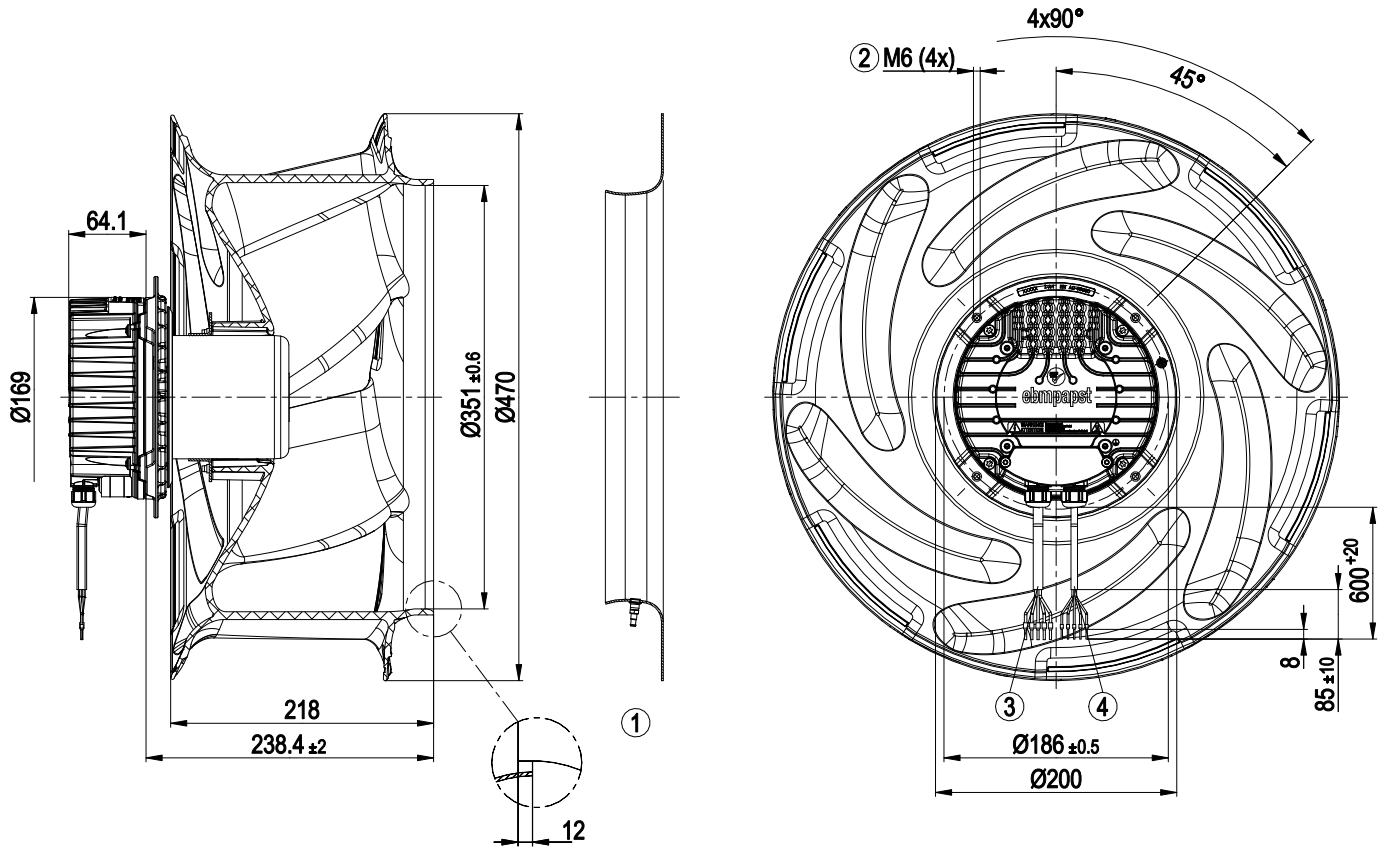
Size	450 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
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 - 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 overload protector (TOP) internally connected
With cable	Variable
Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
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



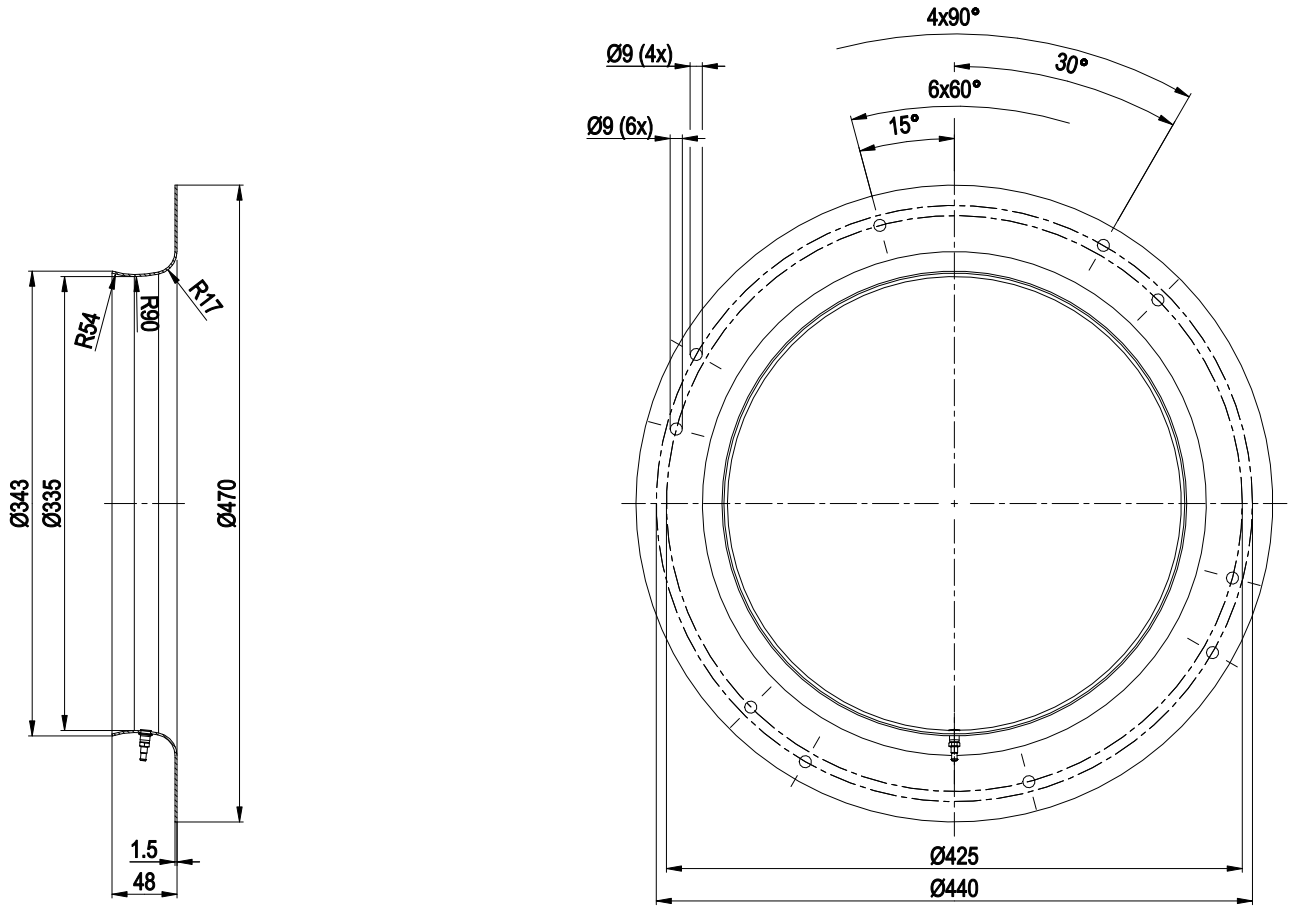
1	Accessory part: Inlet ring 45355-2-4013 with pressure tap (k-factor: 250) (not included in scope of delivery)
2	Max. clearance for screw 16 mm
3	Cable PVC AWG18
	5x wire-end ferrule
4	Cable PVC AWG22
5	5x wire-end ferrule

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Accessory part



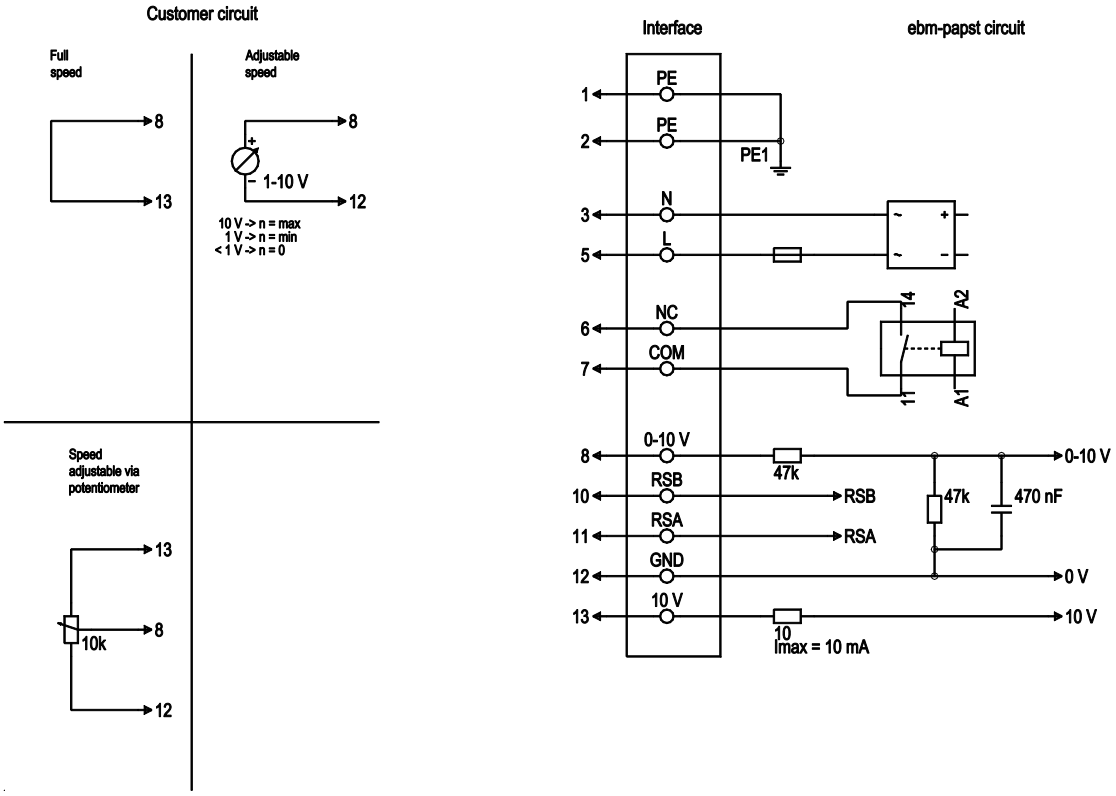
Inlet ring 45355-2-4013 with pressure tap (k-factor: 250)

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Connection diagram



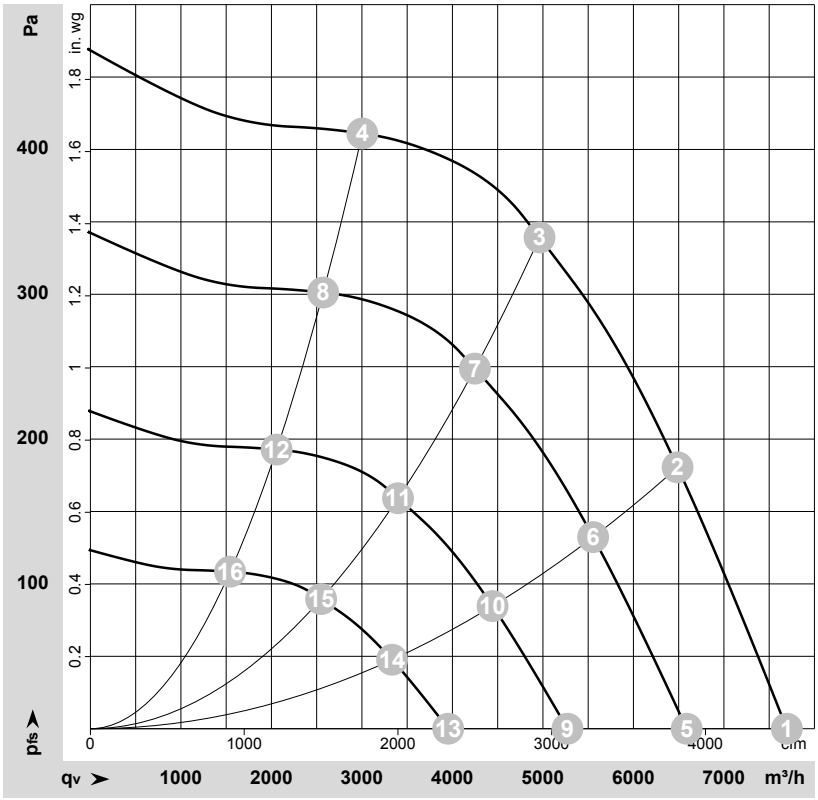
No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
1	5	L	black	Power supply, phase, 50/60 Hz
1	6	NC	white 1	Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) / min. 10 mA, 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-208665-1

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	1~	230	50	1460	439	1.94	77	80	84	7695	0	4530	0.00
2	1~	230	50	1460	659	2.88	68	76	82	6490	180	3820	0.72
3	1~	230	50	1460	750	3.40	63	71	76	4960	340	2920	1.36
4	1~	230	50	1460	683	2.99	66	74	78	3005	410	1770	1.65
5	1~	230	50	1250	275	1.22	73	76	80	6590	0	3880	0.00
6	1~	230	50	1250	413	1.81	64	72	78	5555	133	3270	0.53
7	1~	230	50	1250	476	2.08	59	67	72	4250	249	2500	1.00
8	1~	230	50	1250	428	1.87	62	71	74	2570	301	1515	1.21
9	1~	230	50	1000	141	0.62	67	70	74	5270	0	3100	0.00
10	1~	230	50	1000	212	0.93	59	67	72	4445	85	2615	0.34
11	1~	230	50	1000	244	1.06	54	62	67	3400	159	2000	0.64
12	1~	230	50	1000	219	0.96	57	65	68	2060	193	1210	0.77
13	1~	230	50	750	59	0.26	60	63	67	3955	0	2325	0.00
14	1~	230	50	750	89	0.39	51	59	65	3335	48	1960	0.19
15	1~	230	50	750	103	0.45	46	55	59	2550	90	1500	0.36
16	1~	230	50	750	93	0.40	50	58	61	1545	108	910	0.43

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

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