

EC centrifugal fan - RadiFit

backward-curved, dual-intake

with housing (flange)



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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	D3G250-GG09-01	
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	3850
Power consumption	W	1810
Current draw	A	2.9
Min. ambient temperature	°C	-25
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}	%	60.1	53
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		68.1	61
05 Variable speed drive		Yes	

Data obtained at optimum efficiency level.

The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

09 Power consumption P_{ed}	kW	1.72
09 Air flow q_v	m ³ /h	2890
09 Pressure increase p_{fs}	Pa	1198
10 Speed (rpm) n	min ⁻¹	3855
11 Specific ratio*		1.01

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

LU-165909



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Technical description

Weight	17.8 kg
Size	250 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Housing material	Sheet steel, galvanized
Motor suspension	Motor mounted with brackets on one side
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
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)	+85 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - Power limit - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from supply - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable



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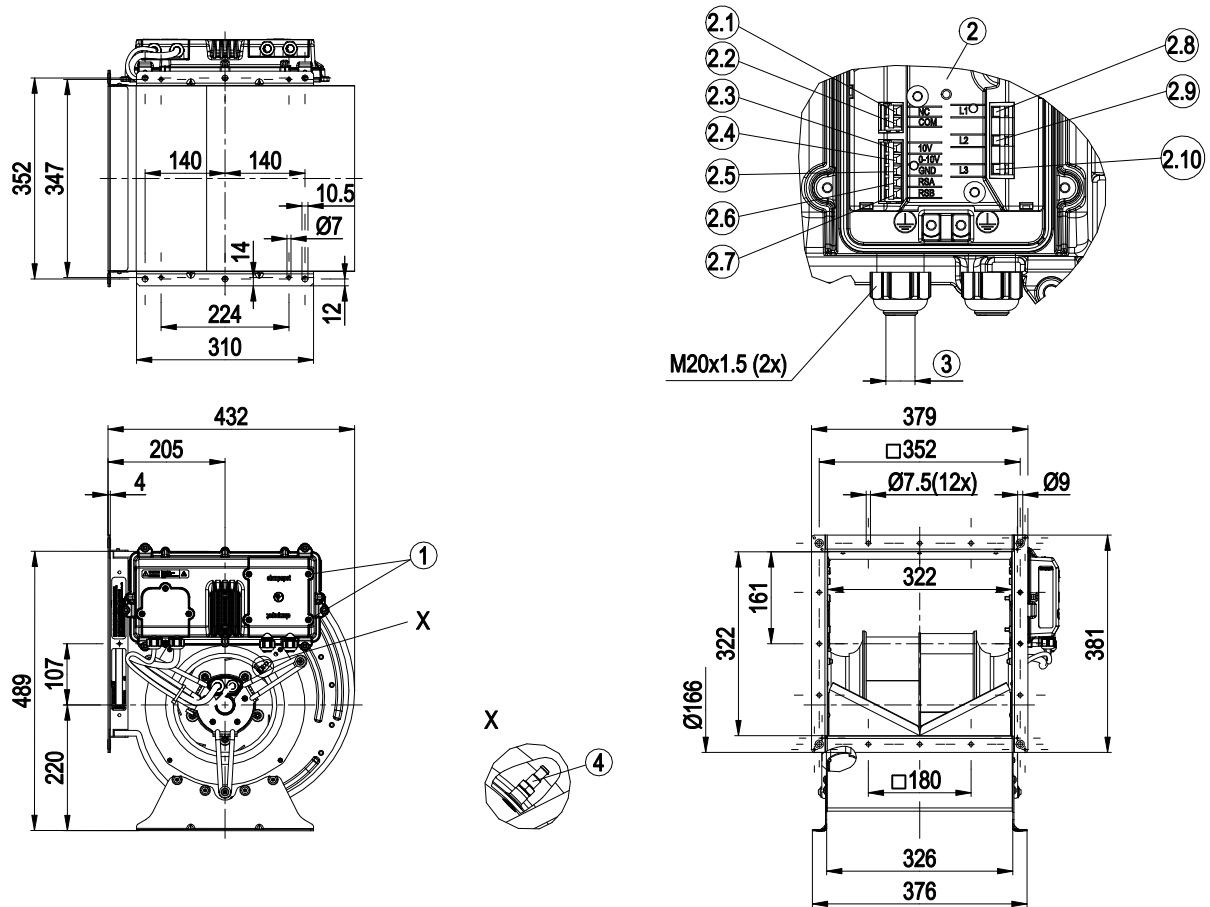
Pollution degree	3
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; CE
Comment	Conformity with standard EN 61800-5-1 in preparation



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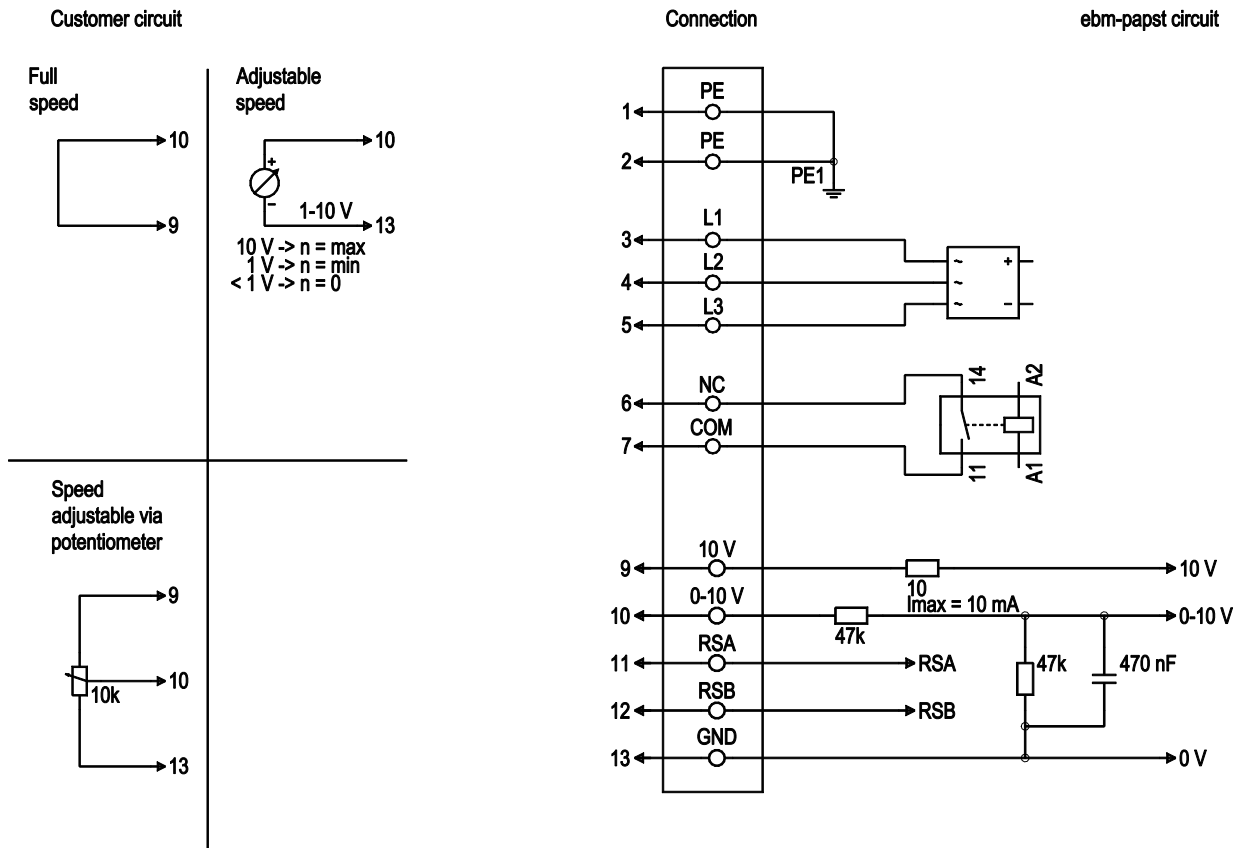
Product drawing



1	Tightening torque 3 ± 0.5 Nm
2	Terminal box open
2.1	NC
2.2	COM
2.3	+10 V
2.4	0-10 V
2.5	GND
2.6	RSA
2.7	RSB
2.8	L1
2.9	L2
2.10	L3
3	Cable diameter min. 8 mm, max. 12 mm, tightening torque 1.8 ± 0.3 Nm
4	Inlet ring with pressure tap (k-factor: 134) on both sides



Connection diagram

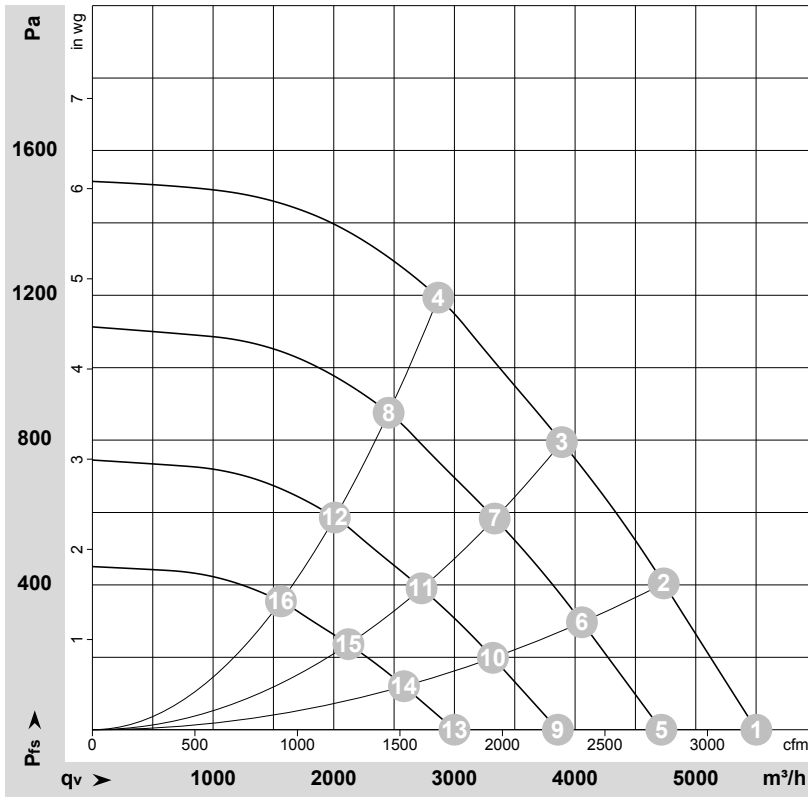


No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3, 4, 5	L1, L2, L3	black	Power supply 50 / 60 Hz
1	6	NC	white 1	Status relay, floating status contact, break for failure; contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and basic insulation on control interface side (or reinforced insulation on control interface side up to 250 VAC potential difference)
1	7	COM	white 2	Status relay, floating status contact, break for failure; contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and basic insulation on control interface side (or reinforced insulation on control interface side up to 250 VAC potential difference)
2	9	+10 V	red	Fixed voltage output 10 VDC, SELV, +10 V $\pm 3\%$, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); fixed voltage input 24 VDC for setting parameters via MODBUS without line voltage supply
2	10	0-10 V	yellow	Analog input (set value) SELV, 0-10 V, $R_i = 100\text{ k}\Omega$, adjustable curve
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	13	GND	blue	Reference ground for control interface, SELV

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Curves: Air performance 50 Hz



$$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$$

Measurement: LU-165909-1

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	Y	400	50	3850	1609	2.57	85	96	101	5500	0	3240	0.00
2	Y	400	50	3850	1764	2.79	83	94	99	4735	400	2785	1.61
3	Y	400	50	3850	1810	2.90	81	91	97	3890	800	2290	3.21
4	Y	400	50	3850	1719	2.73	79	89	93	2865	1200	1685	4.82
5	Y	400	50	3300	1012	1.62	81	92	97	4715	0	2775	0.00
6	Y	400	50	3300	1110	1.76	79	90	95	4055	297	2390	1.19
7	Y	400	50	3300	1139	1.80	78	87	93	3335	586	1960	2.35
8	Y	400	50	3300	1080	1.71	75	85	89	2455	882	1445	3.54
9	Y	400	50	2700	554	0.89	76	87	92	3860	0	2270	0.00
10	Y	400	50	2700	608	0.96	74	85	90	3320	199	1955	0.80
11	Y	400	50	2700	624	0.98	73	82	88	2730	392	1605	1.57
12	Y	400	50	2700	591	0.94	70	80	84	2010	591	1180	2.37
13	Y	400	50	2100	261	0.42	69	80	85	3000	0	1765	0.00
14	Y	400	50	2100	286	0.45	68	78	84	2580	120	1520	0.48
15	Y	400	50	2100	294	0.46	66	76	82	2120	237	1250	0.95
16	Y	400	50	2100	278	0.44	64	74	78	1560	357	920	1.43

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

