D3G310-FG05-05

EC centrifugal fan - RadiFit

backward-curved, dual-intake

with housing (without flange)



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Nominal data

Type	**D3G310-FG05-05**
Motor	**M3G112-IA**

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}	3140
Power consumption	W	3180
Current draw	A	4.9
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}	%	63.9	55.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		69.4	61
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	3.01
09 Air flow q_v	m^3/h	4990
09 Pressure increase p_{fs}	Pa	1310
10 Speed (rpm) n	min^{-1}	3140
11 Specific ratio*		1.01

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

LU-167607

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Technical description

Weight	30.4 kg
Size	310 mm
Motor size	112
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 both sides
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Max. permitted ambient temp. for motor (transport/storage)	+85 °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 - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - Power limiter - 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 the mains - 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
Pollution degree	3
Protection class	I (with customer connection of protective earth)
Conformity with standards	CE

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Approval	EAC
Comment	Conformity with EN 61800-5-1 and EN 60335-1 in preparation

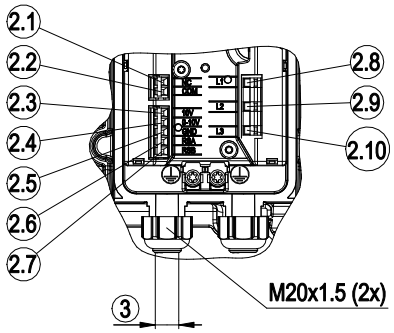
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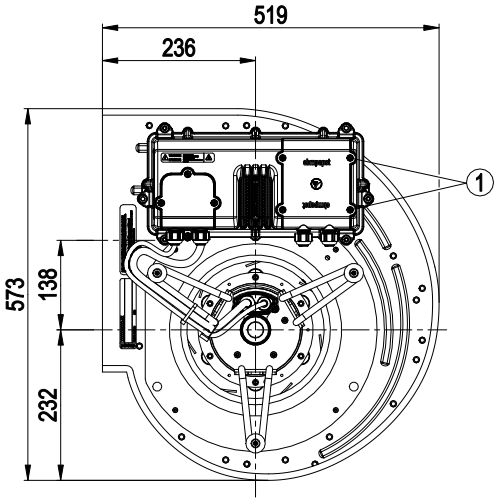
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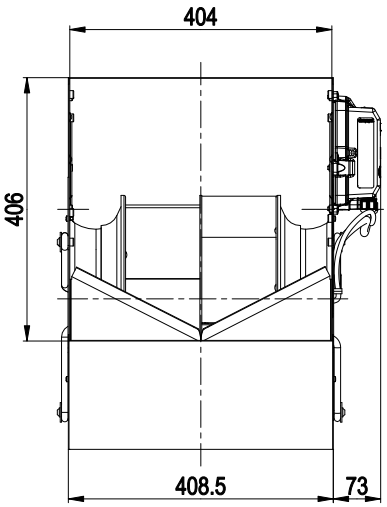
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Product drawing







1	Tightening torque 3 ± 0.5 Nm
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

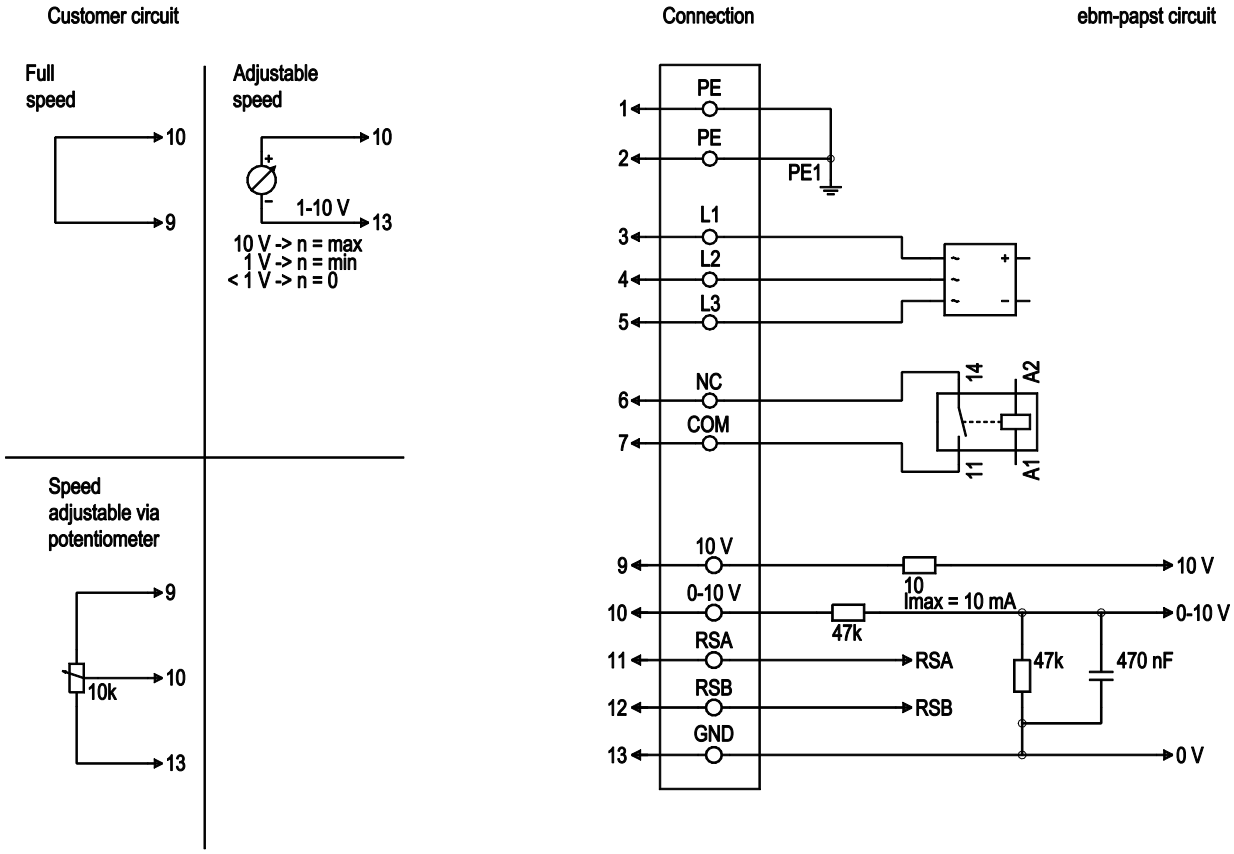
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Connection diagram



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 ±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, Ri = 100 kΩ, 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

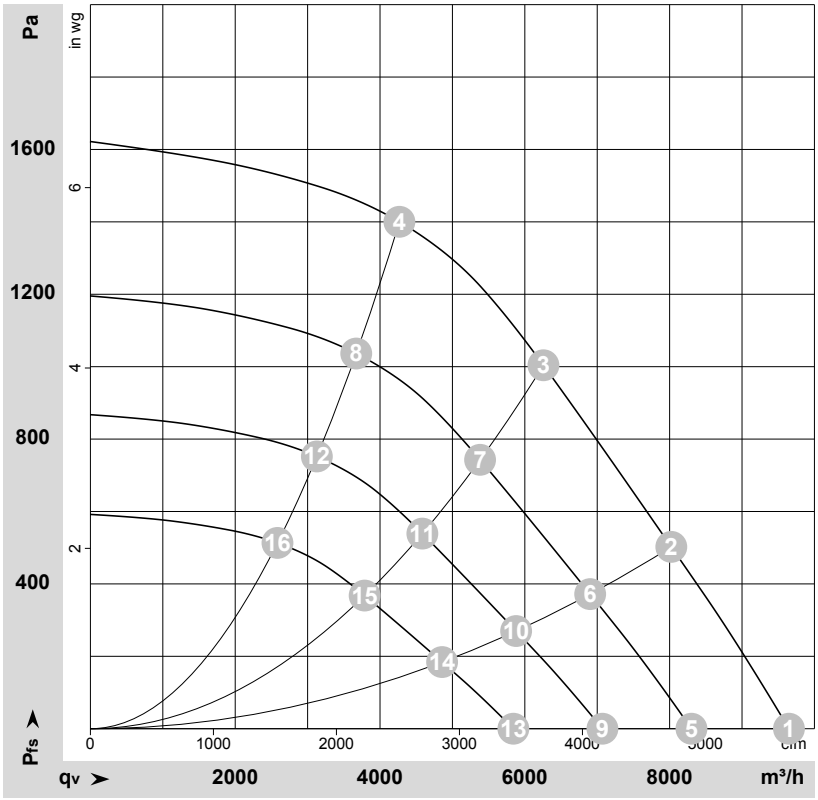
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-167607-1

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	3140	2825	4.35	84	97	105	9650	0	5680	0.00
2	Y	400	50	3140	3093	4.74	81	95	101	8025	500	4720	2.01
3	Y	400	50	3140	3180	4.90	78	91	97	6255	1000	3685	4.01
4	Y	400	50	3140	2809	4.32	77	90	94	4270	1400	2510	5.62
5	Y	400	50	2700	1799	2.77	80	93	101	8300	0	4885	0.00
6	Y	400	50	2700	1971	3.02	78	91	97	6905	372	4065	1.49
7	Y	400	50	2700	2023	3.10	74	88	93	5380	743	3170	2.98
8	Y	400	50	2700	1789	2.75	73	87	90	3670	1037	2160	4.16
9	Y	400	50	2300	1112	1.71	76	89	97	7070	0	4160	0.00
10	Y	400	50	2300	1218	1.87	74	87	93	5880	270	3460	1.08
11	Y	400	50	2300	1251	1.92	70	84	89	4585	539	2700	2.16
12	Y	400	50	2300	1106	1.70	69	83	86	3130	752	1840	3.02
13	Y	400	50	1900	627	0.96	71	84	92	5840	0	3440	0.00
14	Y	400	50	1900	687	1.05	69	82	88	4855	184	2860	0.74
15	Y	400	50	1900	705	1.08	65	79	84	3785	368	2230	1.48
16	Y	400	50	1900	623	0.96	64	78	81	2585	513	1520	2.06

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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