D3G160-IB09-02

EC centrifugal fan

forward-curved, dual-intake

with housing (flange)

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Nominal data

Type	**D3G160-IB09-02**
Motor	**M3G084-FA**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		fa
Speed (rpm)	min^{-1}	2250
Power consumption	W	725
Current draw	A	3.2
Min. back pressure	Pa	0
Min. back pressure	in. wg	0
Min. ambient temperature	°C	-25
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}	%	43.2	35.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		51.7	44
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.44
09 Air flow q_v	m^3/h	1200
09 Pressure increase p_{fs}	Pa	524
10 Speed (rpm) n	min^{-1}	2670
11 Specific ratio*		1.01

Data obtained at optimum efficiency level.

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

LU-175405

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

Weight	8.9 kg
Size	160 mm
Motor size	84
Rotor surface	Painted black
Impeller material	Sheet steel, galvanized
Housing material	Sheet steel, galvanized
Motor suspension	Motor mounted on brackets for one-sided vibration damping
Direction of rotation	Counterclockwise, 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 - Tach output - 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
Electrical hookup	Terminal strip
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Pollution degree	2
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; EN 60335-1; CE; UKCA
Approval	EAC

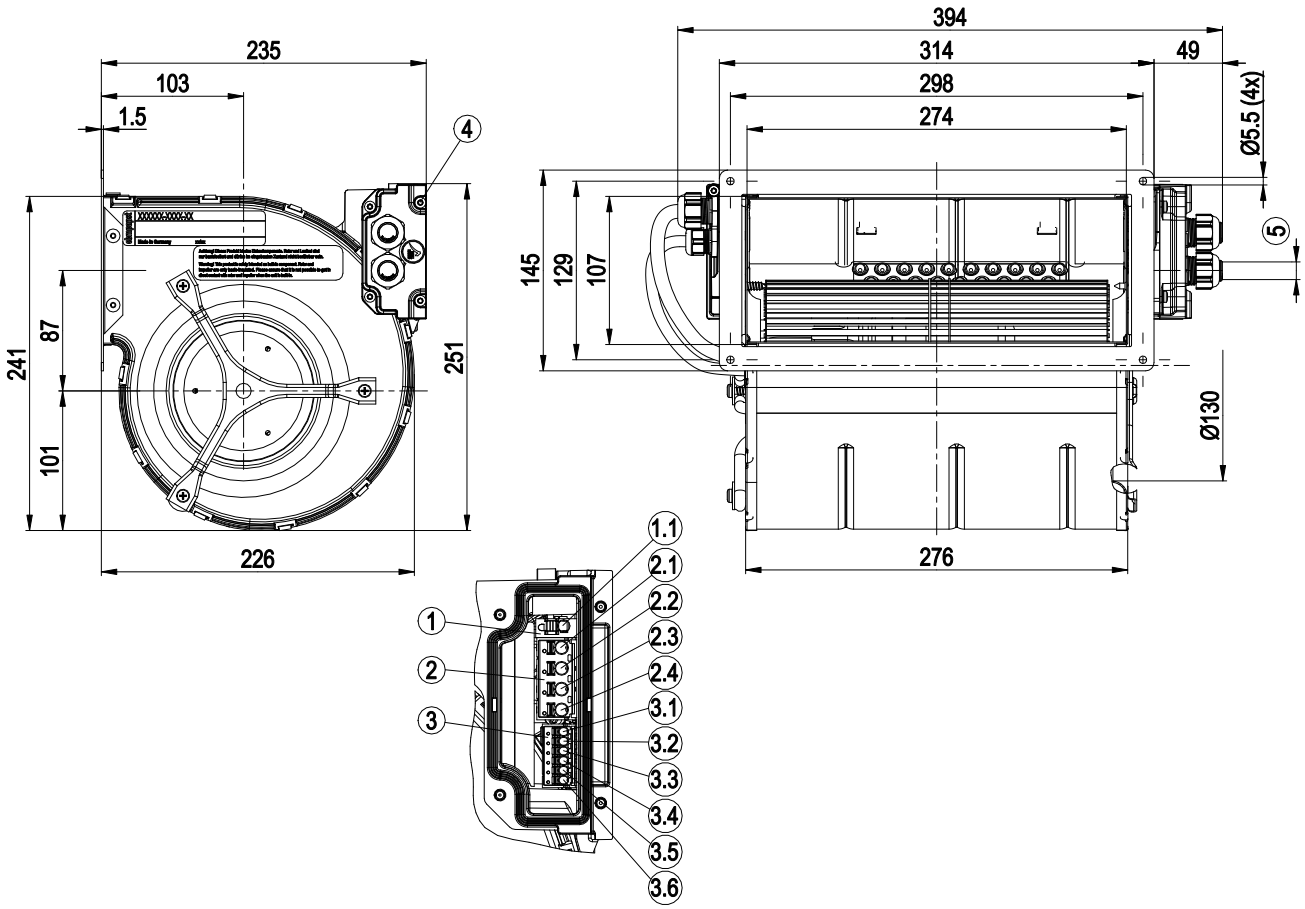
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Product drawing



	Terminal assignment in terminal box
1	Terminal 1
1.1	PE
2	Terminal 2
2.1	L
2.2	N
2.3	NC
2.4	COM
3	Terminal 3
3.1	0-10 V
3.2	+10 V
3.3	GND
3.4	RSA
3.5	RSB
3.6	Tach
4	Tightening torque 3 ± 0.5 Nm
5	Cable diameter min. 6 mm, max. 10 mm, tightening torque 1.8±0.3 Nm Cable diameter min. 8 mm, max. 12 mm, tightening torque 1.8±0.3 Nm (seal provided must be used)

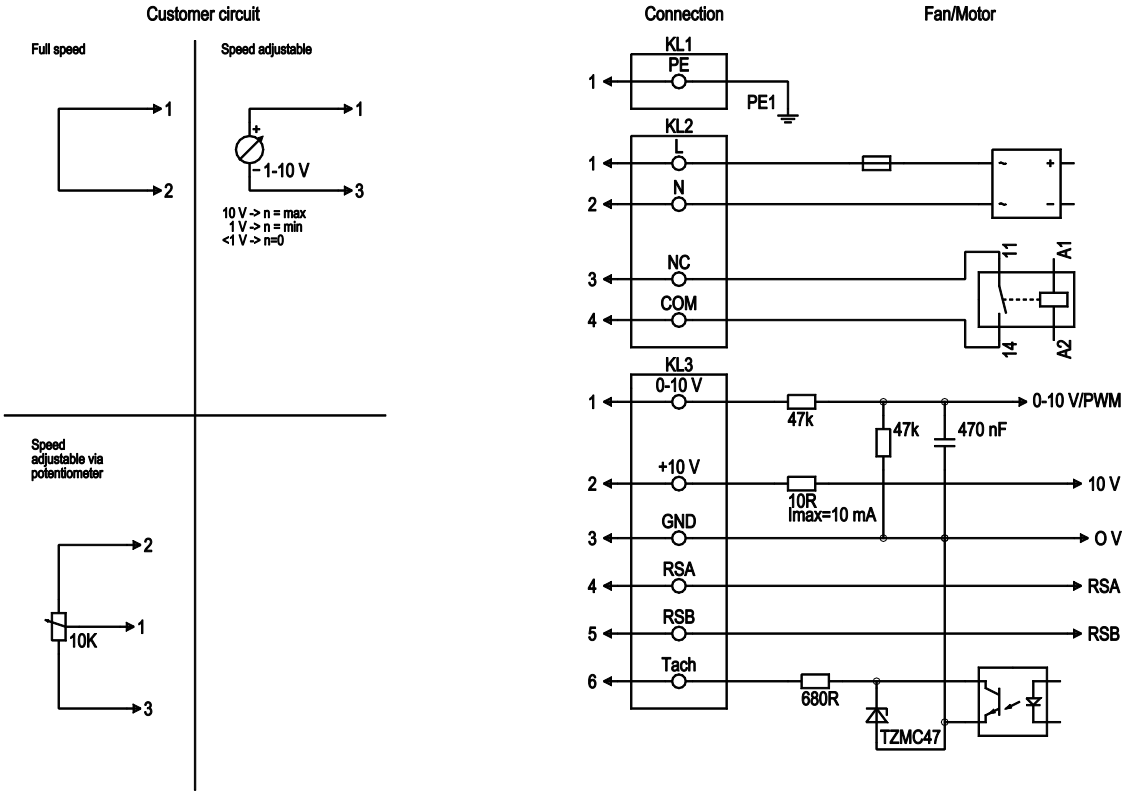
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Connection diagram



No.	Conn.	Designation	Function/assignment
KL1	1	PE	Protective earth
KL2	1	L	Power supply, phase, 50/60 Hz
KL2	2	N	Power supply, neutral conductor, 50/60 Hz
KL2	3	NC	Status relay, floating status contact, break for failure, contact rating 250 VAC/2 A (AC1) min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side
KL2	4	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side
KL3	1	0-10 V	Analog input (set value), 0-10 V, Ri = 100 kΩ, adjustable curve, SELV
KL3	2	+10 V	Fixed voltage output 10 VDC, SELV
KL3	3	GND	Reference ground for control interface, SELV
KL3	4	RSA	RS485 interface for MODBUS, RSA; SELV
KL3	5	RSB	RS485 interface for MODBUS, RSB; SELV
KL3	6	Tacho	Tach output, open collector, 1 pulse per revolution, Isink max = 10 mA, SELV

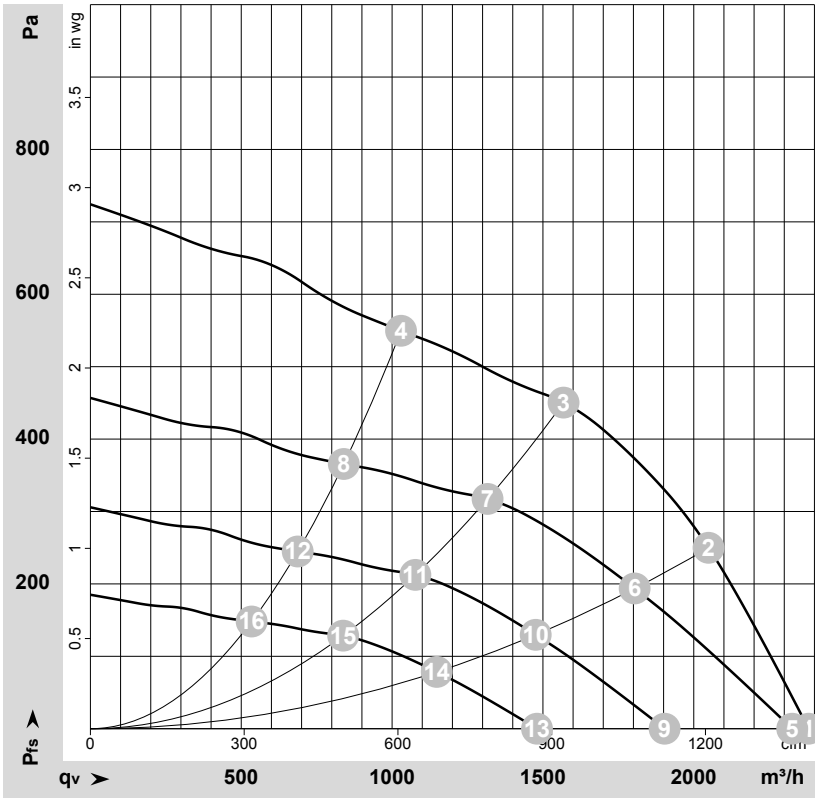
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-175405-1

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	Y	230	50	2250	725	3.20	72	85	2380	0	1400	0.00
2	Y	230	50	2500	709	3.10	71	83	2050	250	1205	1.00
3	Y	230	50	2620	557	2.45	69	81	1570	450	925	1.81
4	Y	230	50	2695	413	1.85	68	80	1030	550	605	2.21
5	Y	230	50	2200	677	2.97	71	84	2325	0	1370	0.00
6	Y	230	50	2200	485	2.12	67	80	1805	194	1060	0.78
7	Y	230	50	2200	329	1.45	64	76	1315	319	775	1.28
8	Y	230	50	2200	224	1.00	63	74	840	365	495	1.47
9	Y	230	50	1800	371	1.62	66	79	1905	0	1120	0.00
10	Y	230	50	1800	265	1.16	62	75	1475	130	870	0.52
11	Y	230	50	1800	180	0.80	59	71	1075	213	635	0.86
12	Y	230	50	1800	123	0.55	58	69	685	245	405	0.98
13	Y	230	50	1400	175	0.76	60	73	1480	0	870	0.00
14	Y	230	50	1400	125	0.55	56	69	1150	79	675	0.32
15	Y	230	50	1400	85	0.37	53	65	840	129	495	0.52
16	Y	230	50	1400	58	0.26	51	63	535	148	315	0.59

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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