R3G250-BE04-H6

EC centrifugal fan

backward-curved, single-intake

for solid-fuel heating systems

ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.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	**R3G250-BE04-H6**
Motor	**M3G084-DF**

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}	3500
Power consumption	W	500
Current draw	A	2.3
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	50

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	50.2	45.9
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		65.3	61
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.36
09 Air flow q_v	m^3/h	495
09 Pressure increase p_{fs}	Pa	1195
10 Speed (rpm) n	min^{-1}	3500
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-172130

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Technical description

Size	250 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet steel, rust- and acid-resistant
Support structure material	Sheet steel, galvanized
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP20
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H0 - dry environment
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
Cooling hole/opening	On rotor side
Mode	S1
Motor bearing	Hybrid bearing; (balls made of Si_3N_4)
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
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC circuit feedback	According to EN 61000-3-2/3
EMC interference emission	According to EN 61000-6-3 (household environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Connector with cable
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Lateral
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; CE
Approval	UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1

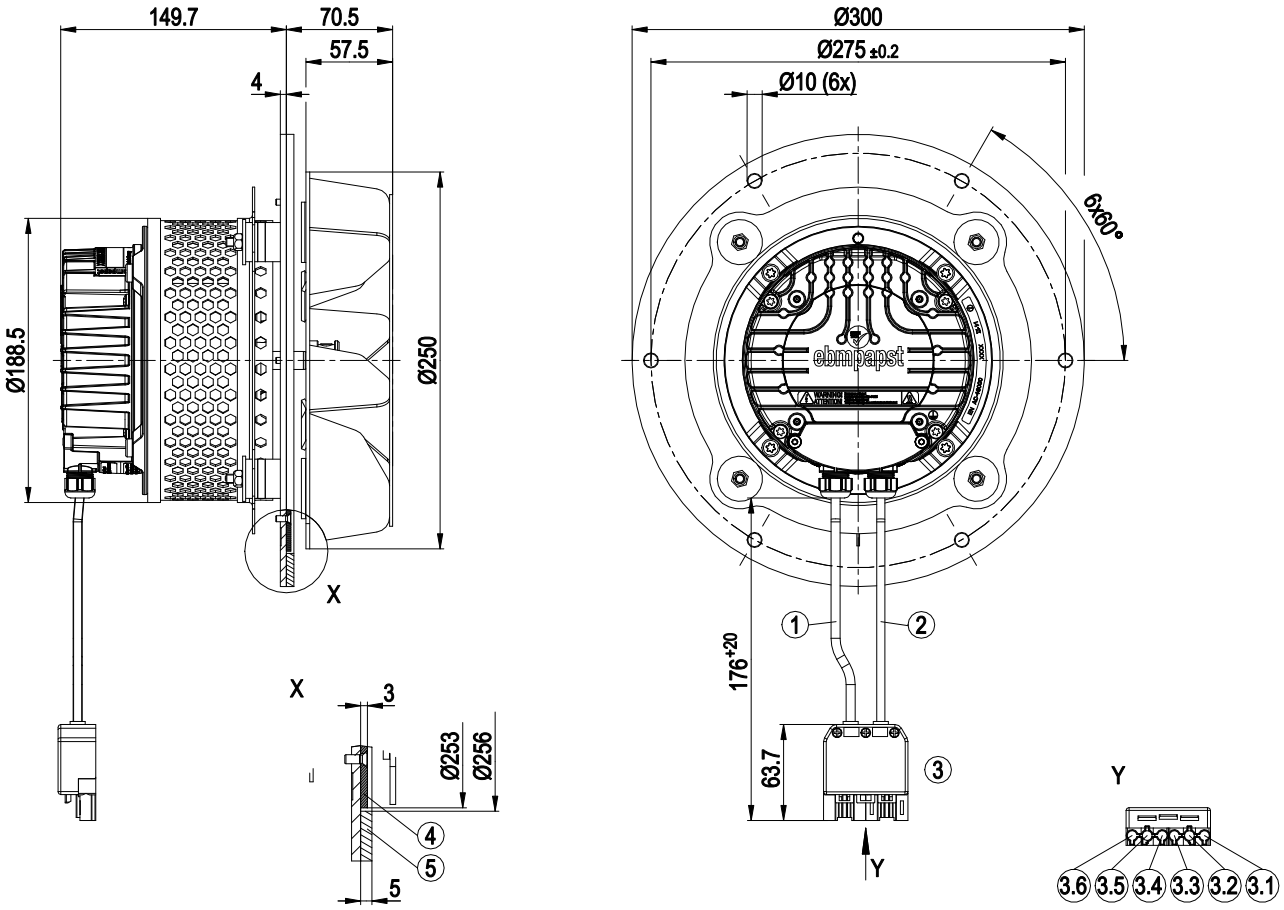
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Product drawing



1	Cable PVC AWG18
2	Cable PVC AWG22
3	6-pole connector housing ST18/6 Wieland 99.402.5168.3
3.1	0-10 V (coding green)
3.2	GND
3.3	Tach (coding green)
3.4	N
3.5	PE
3.6	L
4	Gasket (material Isoplan 750)
5	Gasket (material VMQ silicone foam)

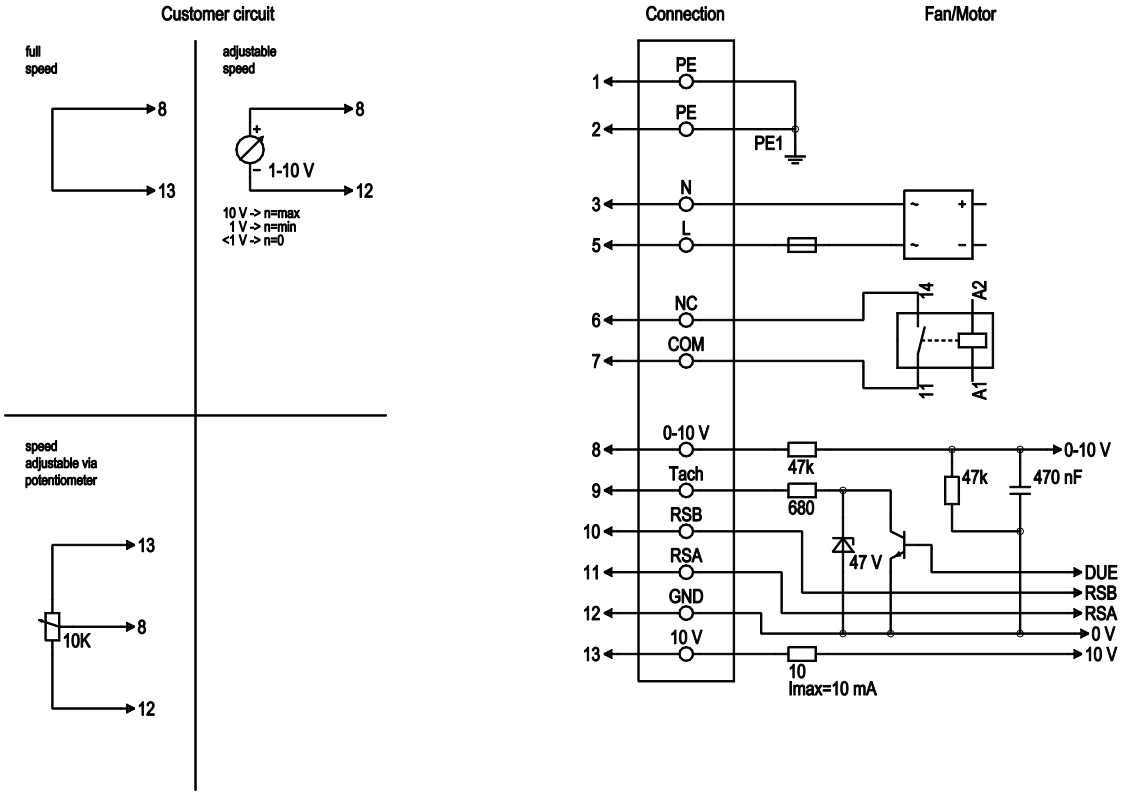
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Connection diagram



No.	Conn.	Designation	Function/assignment
1	1	PE	Protective earth
1	2	PE	not brought out via wire
1	3	N	Power supply, neutral conductor, 50/60 Hz
1	5	L	Power supply, phase, 50/60 Hz
1	6	NC	not brought out via wire
1	7	COM	not brought out via wire
2	8	0-10 V	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	9	Tacho	Tach output: open collector, 1 pulse per revolution, Isink max = 10 mA, SELV
2	10	RSB	not brought out via wire
2	11	RSA	not brought out via wire
2	12	GND	Reference ground for control interface, SELV
2	13	+10 V	not brought out via wire

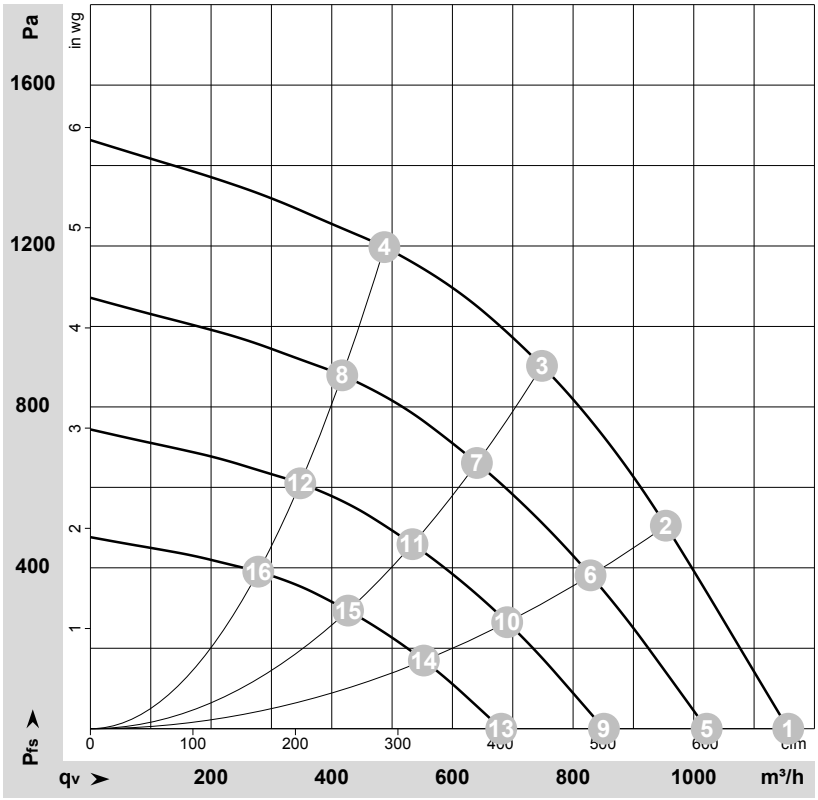
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-172130-1

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

	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	230	50	3400	500	2.30	86	92	1155	0	680	0.00
2	230	50	3500	500	2.30	80	87	955	500	560	2.01
3	230	50	3500	477	2.08	76	83	750	900	440	3.61
4	230	50	3500	365	1.60	73	81	485	1200	285	4.82
5	230	50	3000	358	1.56	83	88	1020	0	600	0.00
6	230	50	3000	341	1.49	77	83	830	381	490	1.53
7	230	50	3000	299	1.31	72	79	640	661	375	2.65
8	230	50	3000	229	1.01	69	77	415	880	245	3.53
9	230	50	2500	207	0.91	78	84	850	0	500	0.00
10	230	50	2500	198	0.86	72	79	690	265	405	1.06
11	230	50	2500	173	0.76	68	75	535	459	315	1.84
12	230	50	2500	133	0.58	65	72	350	611	205	2.45
13	230	50	2000	106	0.46	72	78	680	0	400	0.00
14	230	50	2000	101	0.44	66	73	555	169	325	0.68
15	230	50	2000	89	0.39	62	69	425	294	250	1.18
16	230	50	2000	68	0.30	59	67	280	391	165	1.57

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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