VBH0250PTPGZ K3G250PR17J1

EC centrifugal module

backward-curved, single-intake

with support bracket

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Nominal data

Type	**VBH0250PTPGZ**
Motor	**M3G084-DF**

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}	4000
Power consumption	W	1160
Current draw	A	1.8
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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	66.5	52.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		76.3	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.15
09 Air flow q_v	m^3/h	2405
09 Pressure increase p_{fs}	Pa	1072
10 Speed (rpm) n	min^{-1}	4005
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

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Technical description

Weight	9.3 kg
Size	250 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PA plastic
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Guard grille material	Steel, coated with pebble gray plastic (RAL 7032)
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
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, 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	Connector with cable
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)

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Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

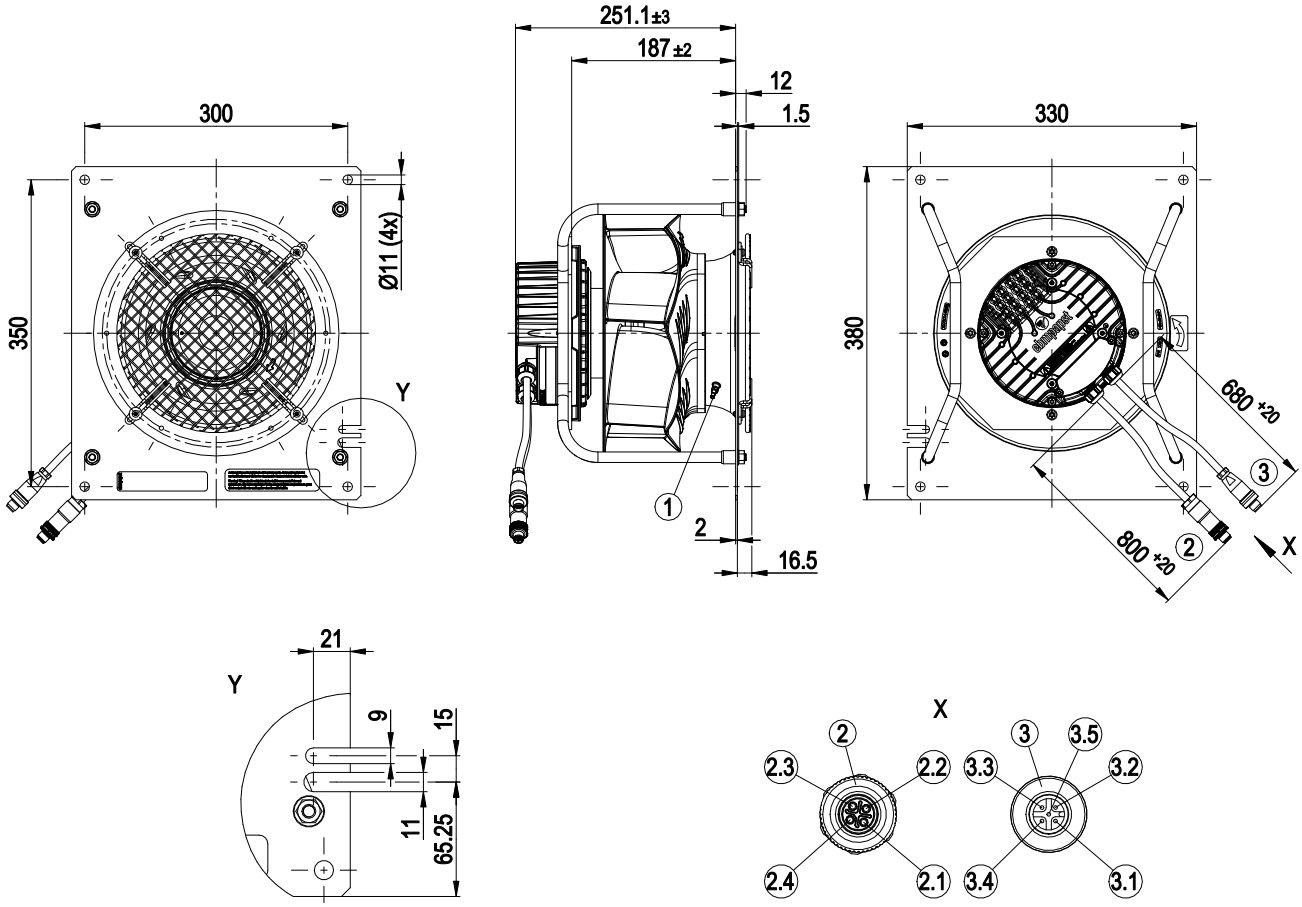
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Product drawing



1	Inlet ring with pressure tap (k-factor: 76)
2	Cable PVC AWG18
	4x wire-end ferrule
	Circular connector 1404641 Phoenix Contact
2.1	L1
2.2	L2
2.3	L3
2.4	PE
3	Cable PVC AWG22
	2x wire-end ferrule
	Circular connector 1553187 Phoenix Contact
3.1	Not used / no function
3.2	Not used / no function
3.3	Not used / no function
3.4	RSA
3.5	RSB

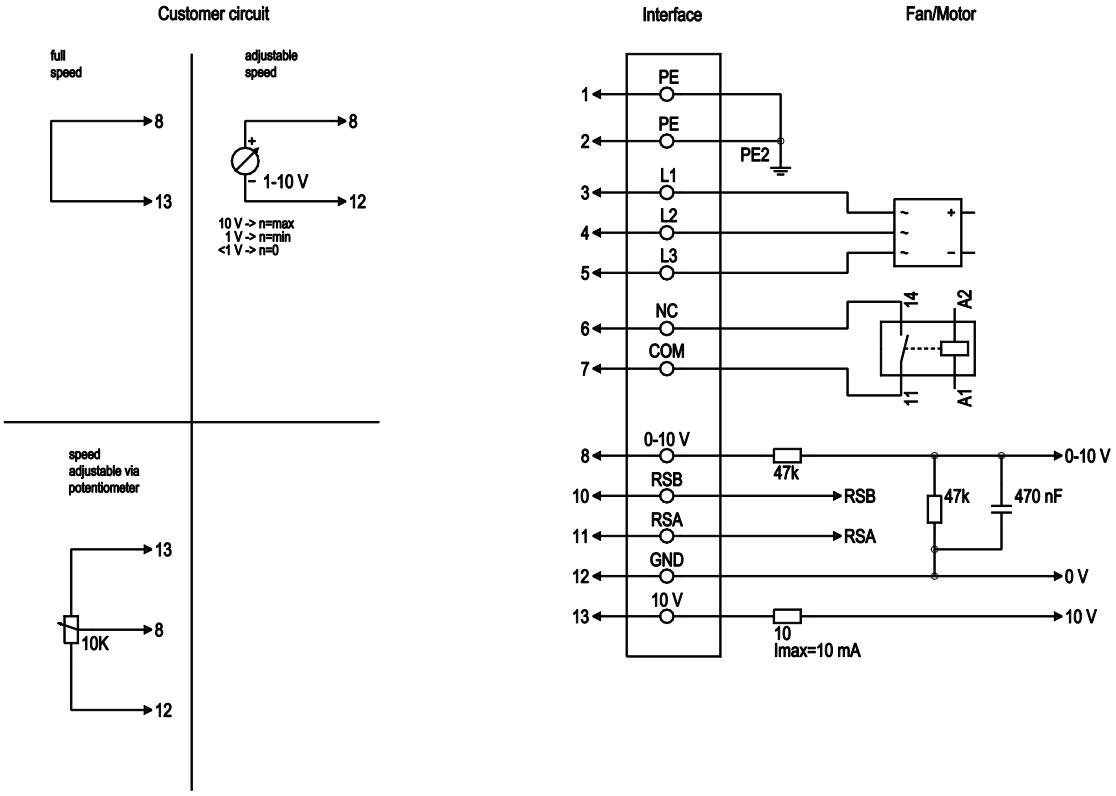
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3, 4, 5	L1, L2, L3	black	Power supply, phase, 50/60 Hz
1	6	NC	-	not brought out via wire
1	7	COM	-	not brought out via wire
2	8	0-10V	-	not brought out via wire
2	10	RSB	yellow	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	-	not brought out via wire
2	13	+10V	-	not brought out via wire

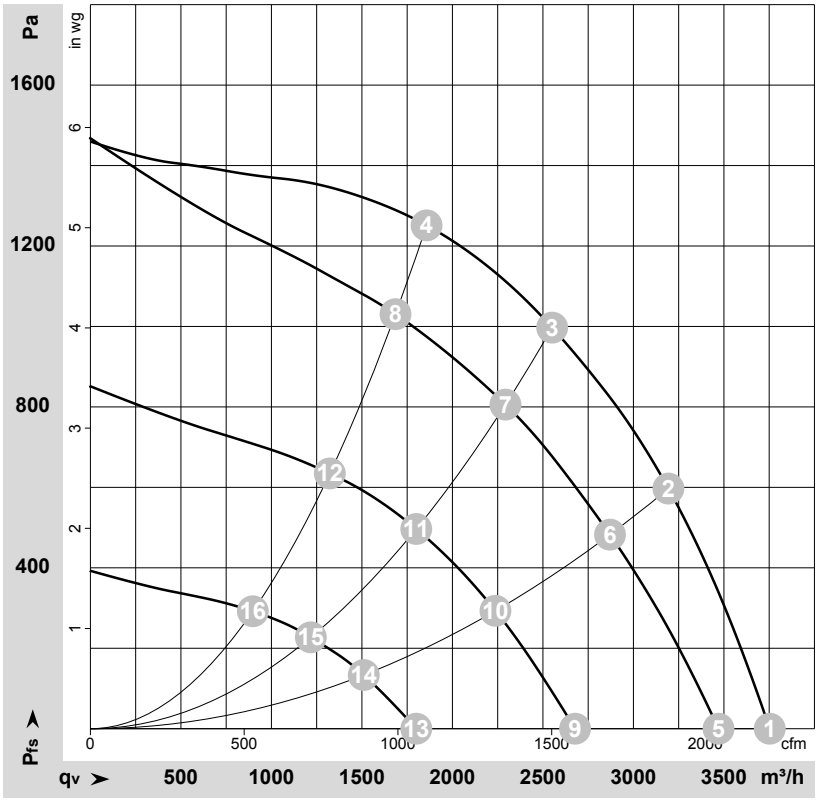
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-175325-1

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	400	50	4000	810	1.30	81	88	3755	0	2210	0.00
2	Y	400	50	4000	1094	1.75	81	88	3195	600	1880	2.41
3	Y	400	50	4000	1160	1.80	78	85	2550	1000	1500	4.01
4	Y	400	50	4000	1100	1.75	75	82	1855	1250	1095	5.02
5	Y	400	50	3775	695	1.15	80	87	3470	0	2040	0.00
6	Y	400	50	3630	836	1.35	76	84	2870	483	1690	1.94
7	Y	400	50	3595	843	1.36	72	79	2295	806	1350	3.24
8	Y	400	50	3610	823	1.33	71	80	1685	1032	990	4.14
9	Y	400	50	2930	333	0.63	74	81	2680	0	1575	0.00
10	Y	400	50	2845	412	0.73	69	76	2240	293	1315	1.18
11	Y	400	50	2835	423	0.75	65	72	1800	497	1060	2.00
12	Y	400	50	2845	417	0.74	66	73	1325	635	780	2.55
13	Y	400	50	1985	125	0.30	64	71	1800	0	1060	0.00
14	Y	400	50	1945	149	0.34	59	66	1510	134	890	0.54
15	Y	400	50	1940	154	0.35	56	63	1220	227	715	0.91
16	Y	400	50	1940	153	0.35	55	63	895	292	530	1.17

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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