W3G650-GC45-53

EC axial fan - HyBlade

sickle-shaped blades (S series)

with square full nozzle

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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**W3G650-GC45-53**
Motor	**M3G084-FA**

Phase		1~
Nominal voltage	VAC	230
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	710
Power consumption	W	254
Current draw	A	1.6
Max. back pressure	Pa	75
Max. back pressure	inH2O	0.3
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	45

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	44.3	29.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		55.2	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.19
09 Air flow q_v	m^3/h	5875
09 Pressure increase p_{fs}	Pa	48
10 Speed (rpm) n	min^{-1}	715
11 Specific ratio*		1.00

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-119981

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Technical description

Weight	22 kg
Fan size	650 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Blade material	Press-fitted sheet steel blank, sprayed with PP plastic
Fan housing material	Sheet steel, pre-galvanized and coated with black plastic
Guard grille material	Steel, phosphated and coated with black plastic
Number of blades	5
Airflow direction	"V"
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP54; installation- and position-dependent
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F3-1
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. 1.1 mA - Tach output - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Thermal overload protection for electronics/motor - Line undervoltage 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	With plug
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; CE
Approval	UL 2111

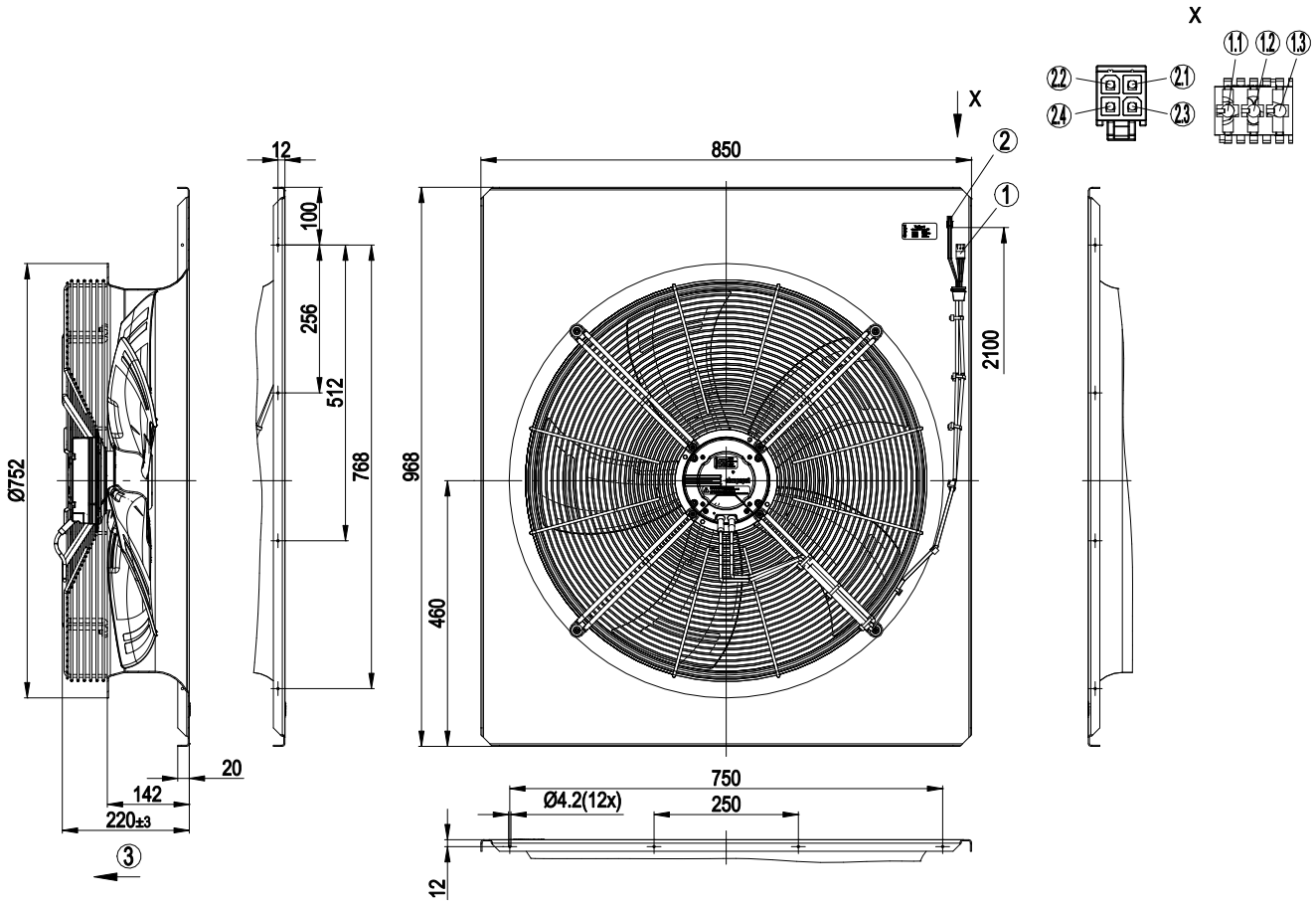
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Product drawing



Cable length from motor

1	Cable PVC AWG18 with 3-pole connector housing (Stocko EH688-003-00D-512), 3x flat push-on receptacle 6.3x0.8
1.1	PE (green/yellow)
1.2	N (blue)
1.3	L (black)
2	Cable PVC AWG22 with 4-pole socket housing (Stocko EH 715-004-003-960), 4x socket (RBB 8230020)
2.1	0-10 V (yellow)
2.2	+10 V (red)
2.3	Tach output (white)
2.4	GND (blue)
3	Direction of air flow "V"

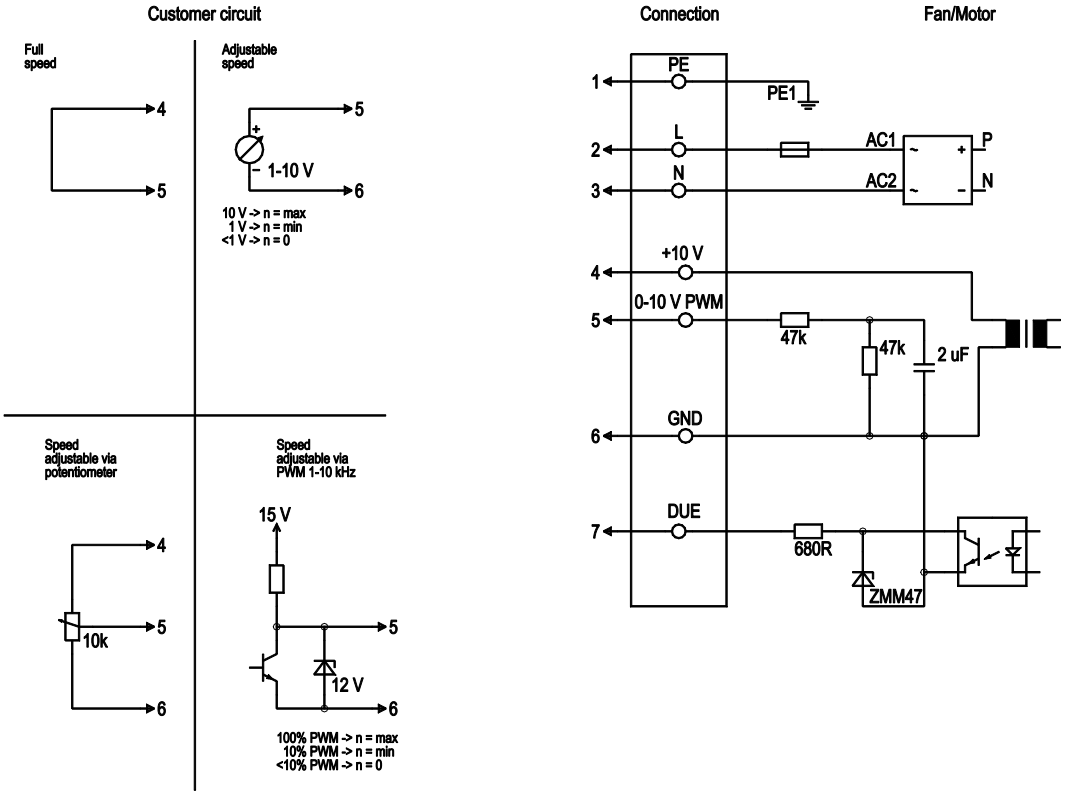
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1	PE	green/yellow	Protective earth
1	2	L	black	Power supply, phase, 50/60 Hz
1	3	N	blue	Power supply, neutral conductor, 50/60 Hz
2	4	+10 V	red	Voltage output +10 V max. 1.1 mA electrically isolated
2	5	0-10 V PWM	yellow	Control input 0-10 V or PWM, electrically isolated
2	6	GND	blue	Reference ground for control interface, electrically isolated
2	7	Tach	white	Tach output electrically isolated, Isink = 10 mA max., 1 pulse/revolution

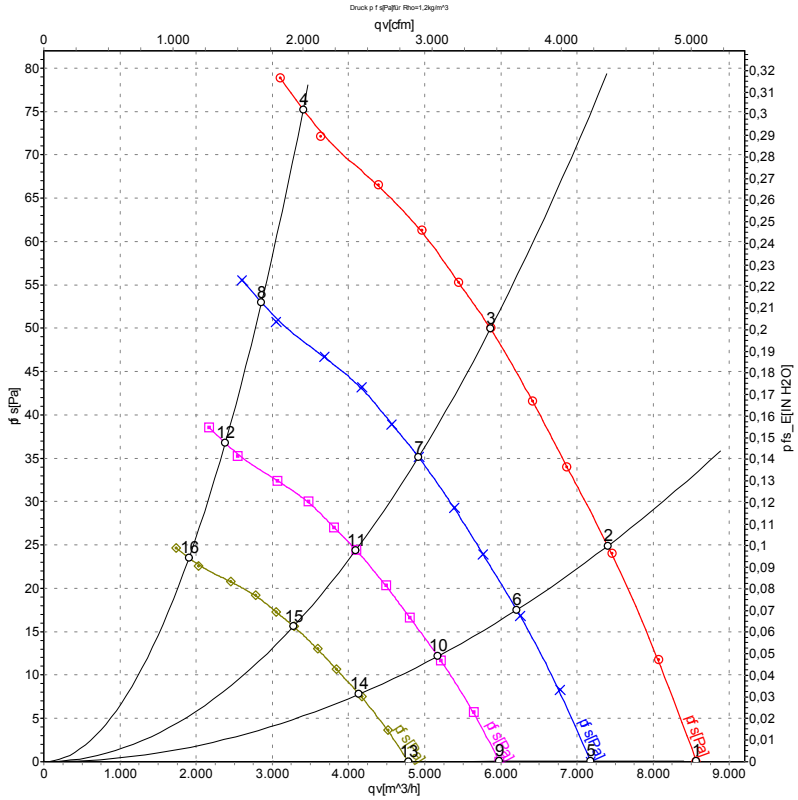
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Curves: Air performance 50 Hz



Measurement: LU-119981-1

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}	LwA_{out}	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	230	50	710	136	0.89	54	61	61	8565	0	5040	0.00
2	230	50	710	173	1.10	56	63	63	7400	25	4355	0.10
3	230	50	710	199	1.25	56	64	64	5865	50	3450	0.20
4	230	50	710	254	1.60	62	70	71	3405	75	2005	0.30
5	230	50	600	80	0.52	50	57	57	7175	0	4225	0.00
6	230	50	600	102	0.65	52	59	59	6205	18	3655	0.07
7	230	50	600	117	0.74	52	60	60	4920	35	2895	0.14
8	230	50	600	148	0.92	58	66	67	2860	53	1680	0.21
9	230	50	500	46	0.30	46	53	53	5980	0	3520	0.00
10	230	50	500	59	0.38	48	55	55	5175	12	3045	0.05
11	230	50	500	68	0.43	48	56	56	4100	24	2410	0.10
12	230	50	500	85	0.53	54	62	63	2380	37	1400	0.15
13	230	50	400	24	0.16	41	48	49	4785	0	2815	0.00
14	230	50	400	30	0.19	43	50	50	4140	8	2435	0.03
15	230	50	400	35	0.22	43	51	52	3280	16	1930	0.06
16	230	50	400	44	0.27	49	58	58	1905	24	1120	0.10

U = Power supply · 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 · qv = Air flow · p_{fs} = Pressure increase

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