W3G630-GU31-08

EC axial fan - HyBlade

sickle-shaped blades (S series)

Fan housing with guard grille

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	**W3G630-GU31-08**	
Motor	**M3G150-IF**	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min^{-1}	1580
Power consumption	W	3700
Current draw	A	5.6
Max. back pressure	Pa	340
Max. back pressure	in. wg	1.36
Min. ambient temperature	°C	-40
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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	37.7	36.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		40.9	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	3.15
09 Air flow q_v	m^3/h	17710
09 Pressure increase p_{fs}	Pa	231
10 Speed (rpm) n	min^{-1}	1580
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

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Technical description

Size	630 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Blade material	Sheet aluminum insert, sprayed with PP plastic
Fan housing material	Sheet steel, galvanized and coated with black plastic (RAL 9005)
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
Blade pitch	0°
Airflow direction	A
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
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	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - 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 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 with cable
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (with customer connection of protective earth)

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

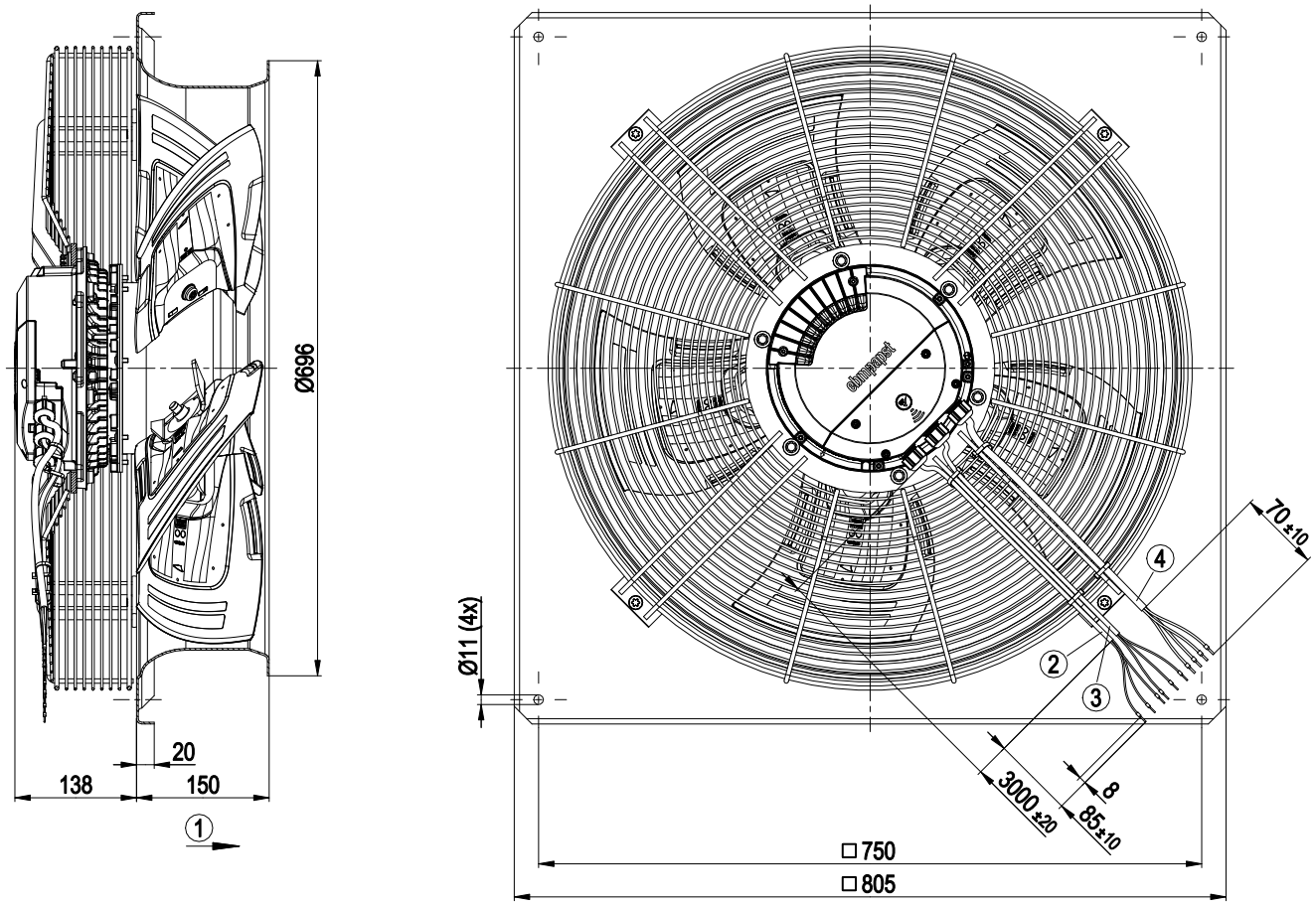
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Product drawing



1	Direction of air flow "A"
2	Cable silicone 3x 0.34 mm²
	3x wire-end ferrule
3	Cable silicone 3x 0.34 mm²
	3x wire-end ferrule
4	Cable silicone 4x 1.5 mm²
	4x wire-end ferrule
	PE=90 mm

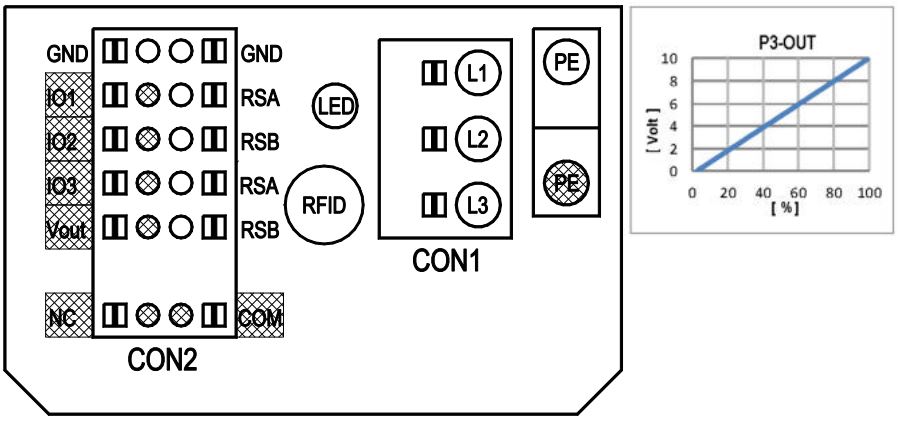
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Connection diagram



shaded gray => not brought out via leads

No.	Conn.	Designation	Color	Function/assignment
4	CON1	L1	black	Power supply, phase, see nameplate for voltage range
4	CON1	L2	brown	Power supply, phase, see nameplate for voltage range
4	CON1	L3	light blue	Power supply, phase, see nameplate for voltage range
4	PE	PE	green/yellow	Protective earth
2, 3	CON2	RSA	2x yellow	RS485 interface for MODBUS, RSA; SELV
2, 3	CON2	RSB	2x red	RS485 interface for MODBUS, RSB; SELV
2, 3	CON2	GND	2x blue	Reference ground for control interface, SELV
-	CON2	IO1	-	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
-	CON2	IO2	-	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V/PWM, Ri=100 KΩ, function: Actual value SELV
-	CON2	IO3	-	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
-	CON2	Vout	-	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
-	CON2	COM	-	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
-	CON2	NC	-	Status relay, floating status contact, break for failure
		LED		green: status = good, ready for operation orange: status = warning red: status = failure
		P3-OUT		Output characteristic curve

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Terminal/plug assignment

CON2	configurable IO mode	electrical specification	MODBUS Register for IO mode configuration	configurable IO functions: normal / inverse	INPUT: source: set value	INPUT: source: sensor value	INPUT: switch: parameter set: #1 / #2	INPUT: switch: control function: heating (pos.) / cooling (neg.)	INPUT: switch: direction of rotation: cw / ccw	INPUT: switch: set value source	INPUT: switch: fan enable / disable	OUTPUT: signal: tach out (selected directly via IO mode)	OUTPUT: signal: diagnostics out (selected directly via IO mode)	OUTPUT: signal: fan modulation level % D130 [0]	OUTPUT: signal: actual speed D130 [1]	OUTPUT: signal: system modulation level % D130 [2]	OUTPUT: signal: remote control output 0-10V D130 [5]	OUTPUT: pulse input for auto-adressing D00C [1]	OUTPUT: pulse output for auto-adressing D130 [4]
IO1	○ **Din1 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D158 [0]				○	○	○	○	○								
	○ **Ain1 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, f_{PWM}=1k..10KHz, SELV	D158 [2]		○														
	○ **Tach out** (open collector output)	Umax=50VDC, Imax=20mA SELV	D158 [5]									○							
	○ **Diagnostics out** (open collector output)	Umax=50VDC, Imax=20mA SELV	D158 [6]										○						
IO2	○ **Din2 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]				○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]			○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]			○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]					○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]					○	○	○	○								
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]		○														
	○ **Aout3 0-10V**: analog output	function parameterizable, max. 5mA, max output frequency 300Hz, SELV	D15A [4]											○	○	○	○		○
	○ **Tacho out** (pulses), analog output	0-10V max. 5mA, max output frequency 300Hz, SELV	D15A [5]									○							
	○ **Diagnostics out** (pulses)	0-10V max. 5mA, max output frequency 300Hz, SELV	D15A [6]										○						
RSA RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

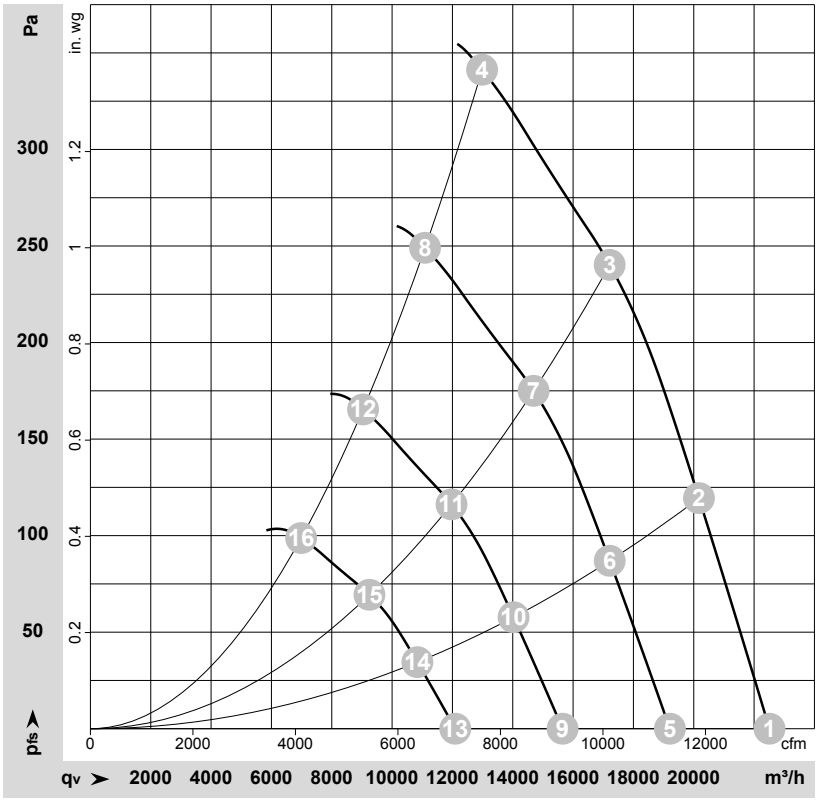
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-205533-1

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	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	3~	400	50	1580	2604	4.02	22510	0	13250	0.00
2	3~	400	50	1580	2879	4.43	20170	120	11875	0.48
3	3~	400	50	1580	3210	4.92	17215	240	10130	0.96
4	3~	400	50	1580	3700	5.60	12985	340	7645	1.36
5	3~	400	50	1350	1618	2.50	19210	0	11305	0.00
6	3~	400	50	1350	1789	2.75	17215	89	10130	0.36
7	3~	400	50	1350	1996	3.06	14690	176	8645	0.71
8	3~	400	50	1350	2346	3.58	11090	249	6530	1.00
9	3~	400	50	1100	875	1.35	15650	0	9210	0.00
10	3~	400	50	1100	968	1.49	14025	59	8255	0.24
11	3~	400	50	1100	1080	1.66	11970	117	7045	0.47
12	3~	400	50	1100	1269	1.94	9040	166	5320	0.67
13	3~	400	50	850	404	0.62	12095	0	7120	0.00
14	3~	400	50	850	447	0.69	10840	35	6380	0.14
15	3~	400	50	850	498	0.76	9250	70	5445	0.28
16	3~	400	50	850	586	0.89	6985	99	4110	0.40

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase

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