

EC axial fan - HyBlade

sickle-shaped blades (S series)

Fan housing with guard grille

W3G630-GU31-06 ebmpapst Datasheet

sales@fansco.com

www.fansco.com

Nominal data

Type	W3G630-GU31-06	
Motor	M3G150-IF	

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	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}	%	37.3	37.3	09 Power consumption P_{ed}	kW	3.66
02 Measurement category		A		09 Air flow q_v	m ³ /h	15490
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	329
04 Efficiency grade N		40.1	40	10 Speed (rpm) n	min ⁻¹	1585
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

* Specific ratio = $1 + p_s / 100\,000\text{ Pa}$

LU-202449

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	38.78 kg
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	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2+S
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 V6.3 - Motor current limitation - 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
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE



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Approval

UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1

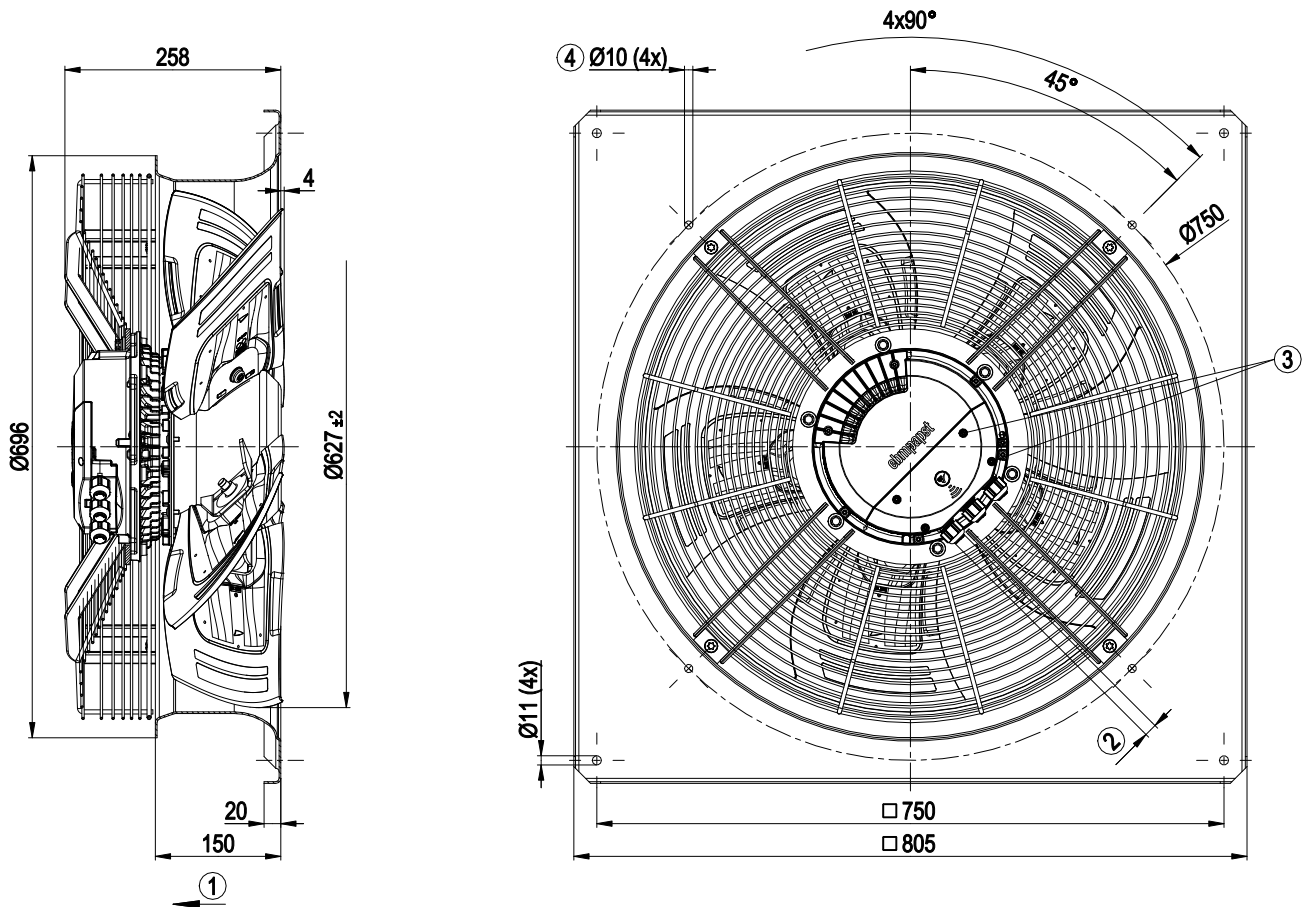


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Product drawing



1	Airflow direction "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm (The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Tightening torque 1.5 ± 0.2 Nm
4	Attachment holes for FlowGrid (63000-2-2957 not included in scope of delivery)

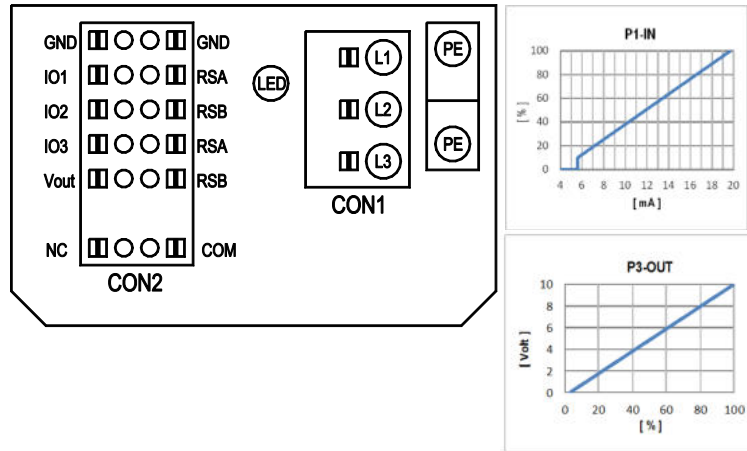


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Connection diagram



No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	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 4-20 mA, Ri=125 Ω, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), 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
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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Terminal/plug assignment

configurable IO functions: normal / inverse		MODBUS Register for IO mode configuration	electrical specification	configurable IO mode		CON2
				Din1 (active high): digital input		
IO1	○ Ain1 0-10V/PWM: analog input	RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC			
	○ Tach out (open collector output)	Umax = 50VDC, Imax = 20mA, SELV				
	○ Diagnostics out (open collector output)	Umax = 50VDC, Imax = 20mA, SELV				
IO2	○ Din2 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC			
	○ Ain2 0-10V/PWM: analog input	RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV				
	○ Ain2 4-20mA: analog input	RI = 125R, characteristic curve parameterizable, SELV				
IO3	○ Din3 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC			
	○ Din3 (active low): digital input		active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3.5-50VDC			
	○ PWMIn3: digital input, idle level high		PWM = 40Hz - 10KHz, characteristics parameterizable active: pin open or applied voltage 3.5-50VDC not active: applied voltage < 1.5VDC, SELV			
	○ PWMIn3: digital input, idle level low		40Hz - 10KHz, characteristics parameterizable active: applied voltage 3.5-50VDC not active: pin open or applied voltage < 1.5VDC, SELV			
	○ Aout3 0-10V: analog output		function parameterizable, max. 5mA max output frequency 300Hz, SELV			
	○ Tacho out (pulses), analog output		0-10V/max. 5mA max output frequency 300Hz, SELV			
RSA RSB	○ Diagnostics out (pulses)		0-10V/max. 5mA max output frequency 300Hz, SELV			
	RS485 bus connection,		MODBUS RTU, specification V6.3, SELV			
Vout	voltage output		voltage parameterizable 3.3..24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV			
	alternatively: Input auxiliary power supply for parameterization 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 V6.3

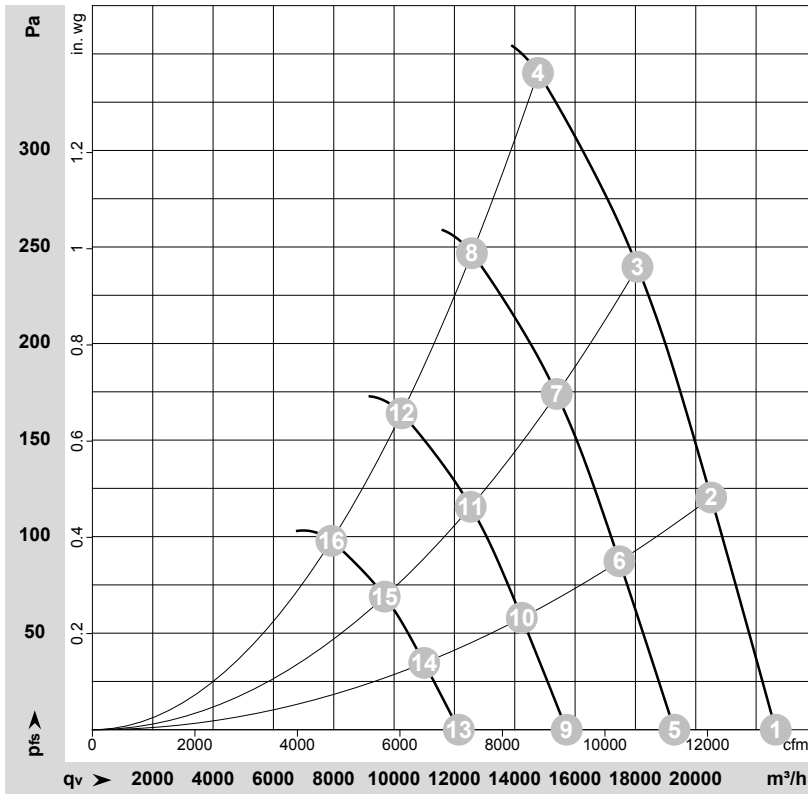


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Curves: Air performance 50 Hz



$$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$$

Measurement: LU-202449-1

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}	LwA _{out}	q _v	p _{fs}	q _v	p _{fs}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	m ³ /h	Pa	cfm	in. wg
1	3~	400	50	1580	2960	4.55	75	82	84	22650	0	13330	0.00
2	3~	400	50	1580	3237	4.96	75	82	83	20510	120	12070	0.48
3	3~	400	50	1580	3501	5.36	76	82	82	18070	240	10635	0.96
4	3~	400	50	1580	3700	5.60	80	86	85	14770	340	8695	1.36
5	3~	400	50	1350	1829	2.81	71	78	80	19290	0	11355	0.00
6	3~	400	50	1350	2000	3.07	71	78	79	17470	89	10280	0.36
7	3~	400	50	1350	2163	3.31	72	78	78	15390	176	9060	0.71
8	3~	400	50	1350	2279	3.48	75	82	81	12580	247	7405	0.99
9	3~	400	50	1100	990	1.52	66	73	74	15720	0	9250	0.00
10	3~	400	50	1100	1082	1.66	66	72	73	14235	59	8375	0.24
11	3~	400	50	1100	1170	1.79	67	73	73	12540	117	7380	0.47
12	3~	400	50	1100	1233	1.88	70	77	76	10250	164	6035	0.66
13	3~	400	50	850	457	0.70	60	66	68	12145	0	7150	0.00
14	3~	400	50	850	499	0.77	59	66	67	11000	35	6475	0.14
15	3~	400	50	850	540	0.83	60	66	67	9690	70	5705	0.28
16	3~	400	50	850	569	0.87	64	70	70	7920	98	4660	0.39

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
 LwA_{out} = Sound power level outlet side · q_v = Air flow · p_{fs} = Pressure increase

