

EC axial fan - HyBlade

sickle-shaped blades (S series)

Fan housing with guard grille

W3G710-DU29-36 ebmpapst Datasheet

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Nominal data

Type	W3G710-DU29-36	
Motor	M3G150-IF	
Phase		3~
Nominal voltage	VAC	200
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min ⁻¹	1310
Power consumption	W	3360
Current draw	A	10.2
Max. back pressure	Pa	300
Max. back pressure	in. wg	1.2
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

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

Data according to Commission Regulation (EU) 327/2011 (EN 17166)

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	38.4	36.9	09 Power consumption P_{ed}	kW	3.2
02 Measurement category		A		09 Air flow q_v	m ³ /h	17135
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	247
04 Efficiency grade N		41.5	40	10 Speed (rpm) n	min ⁻¹	1310
05 Variable speed drive		Yes		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-213895

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

Size	710 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+A
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; (sealed)
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
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.



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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

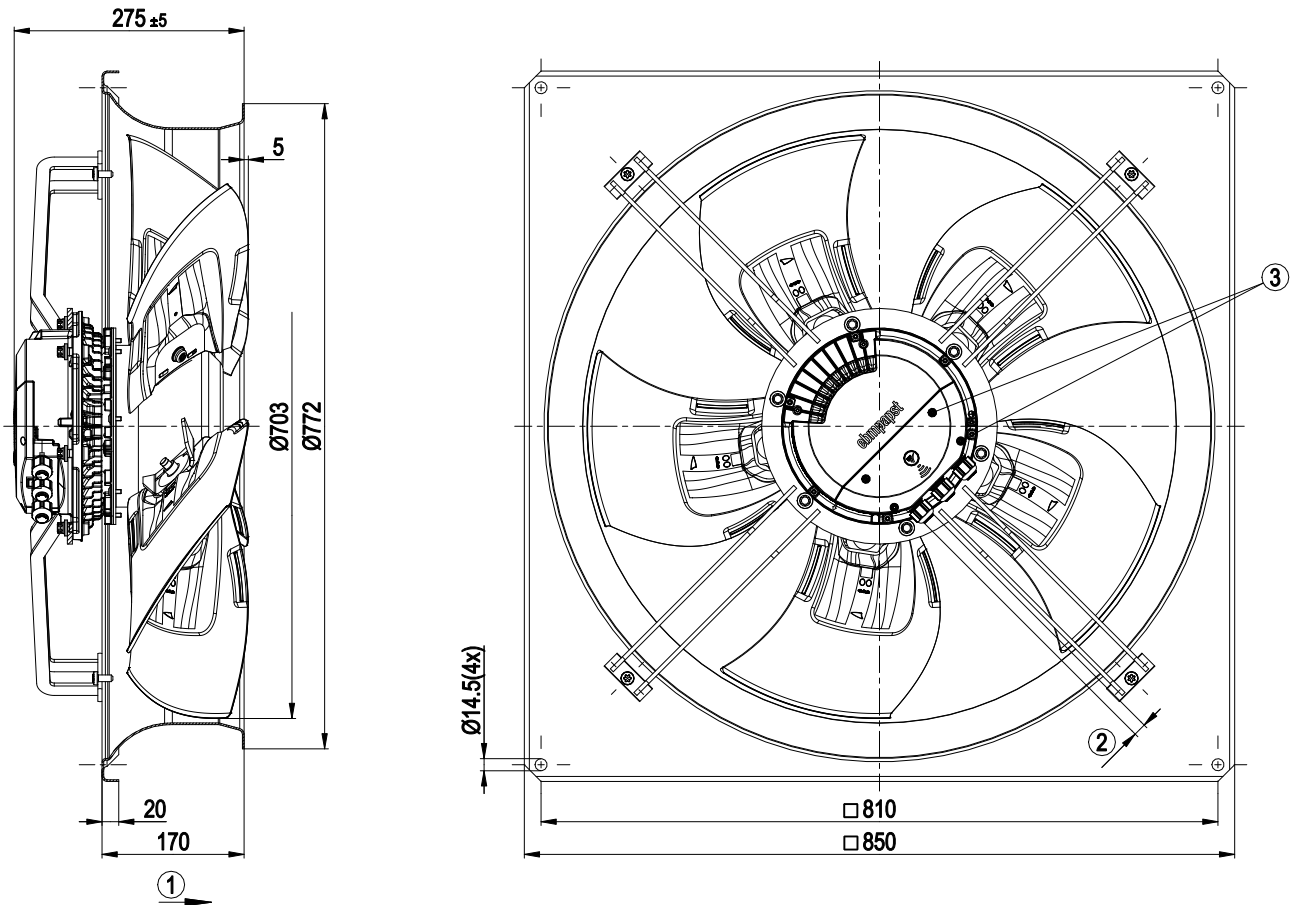


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Product drawing



1	Direction of air flow "A"
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

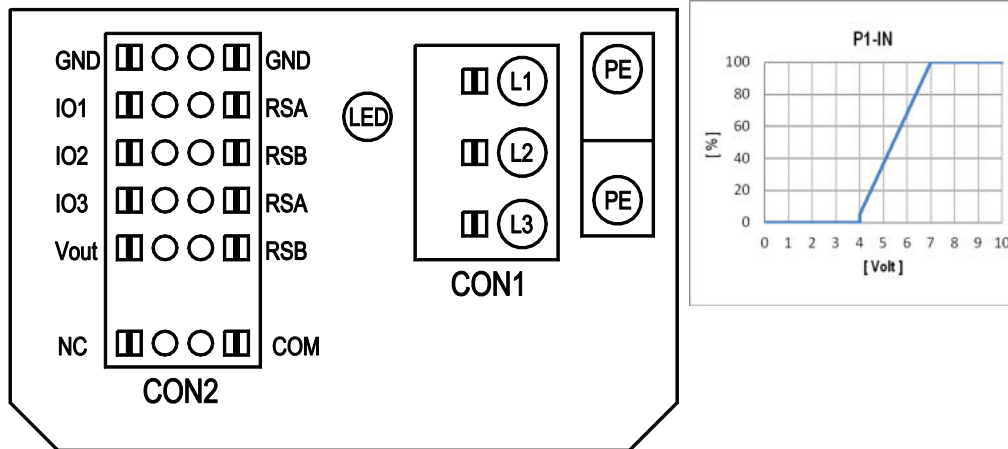


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Connection diagram



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: Diagnostic output (open collector), SELV U _{max} = 50 VDC, I _{max} = 20 mA
	CON2	IO2	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog input 0-10 V/PWM, R _i =100 kΩ, function: set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see "Optional interface functions" table) Factory setting: Digital input - low active, function: Disable input, SELV - inactive: Pin open or applied voltage 3.5-50 VDC - active: applied voltage < 1.5 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	Vout	Voltage output 3.3-24 VDC +/-5%, P _{max} =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

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Terminal/plug assignment

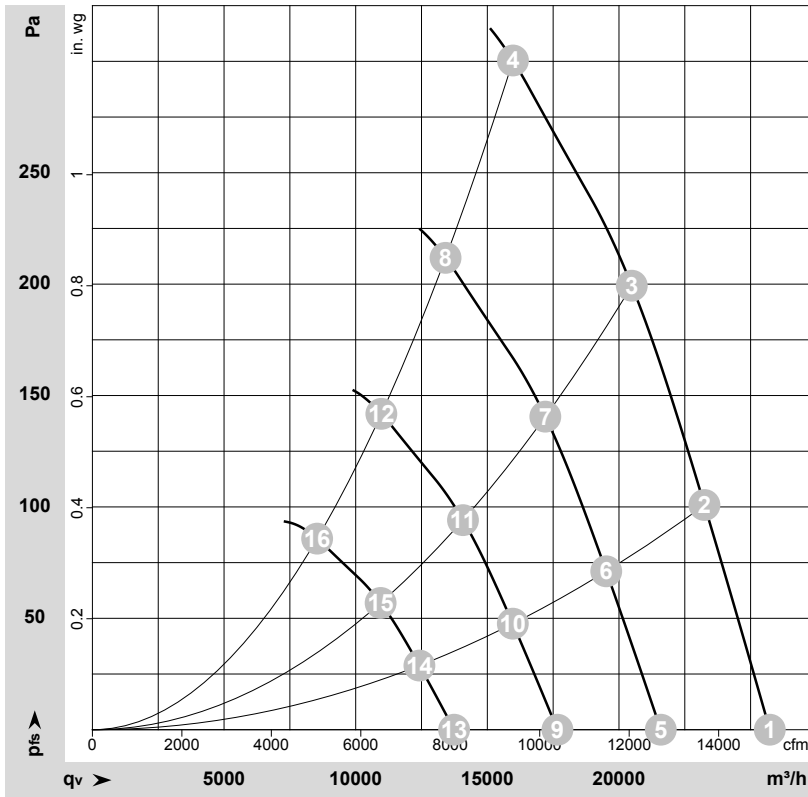
◦ configurable option																								
For further information and additional functions see EC Control Software, Fan-Set-App. or MODBUS Parameter Specification V6.3																								
CON2	IO1	configurable IO mode	electrical specification	configurable IO functions: normal / inverse	MODBUS Register for IO mode configuration	OUTPUT																		
						Din1 (active high): digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC	D158 [0]	◦	switch: fan enable / disable	D16A [...]	(selected directly via IO mode)	signal: tach out	D130 [0]	signal: fan modulation level %	D130 [1]	signal: actual speed	D130 [2]	signal: system modulation level %	D130 [5]	signal: remote control output 0-10V	D00C [1]	pulse output for auto-addressing	D130 [4]
						Ain1 0-10V/PWM: analog input	RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV	D158 [2]	◦	switch: set value source	D16C [...]													
						Tach out (open collector output)	U _{max} = 50VDC, I _{max} = 20mA, SELV	D158 [5]																
	IO2	Din2 (active high): digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC	D159 [0]	◦	switch: direction of rotation: cw / ccw	D148 [...]	switch: control function: heating (pos.) / cooling (neg.)	D12E [...]	switch: parameter set: #1 / #2	D104 [...]	source: sensor value	D147 [...]	source: set value	D101 [...]									
			Ain2 0-10V/PWM: analog input	RI = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz, SELV	D159 [2]	◦																		
	IO3	Din3 (active high): digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC	D15A [0]																				
			Din3 (active low): digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3.5-50VDC	D15A [1]																			
			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	D15A [7]	◦																		
			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	D15A [8]	◦																		
RSA RSB	voltage output	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]																				
		RS485 bus connection,	MODBUS RTU, specification V6.3, SELV																					
Vout	alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage	voltage output	voltage parameterizable 3.3..24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																				
			15..50VDC																					

◦ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.3



Curves: Air performance 50 Hz



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

Measurement: LU-206080-1

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~	200	50	1310	2619	7.95	72	79	80	25730	0	15145	0.00
2	3~	200	50	1310	2904	8.80	72	79	80	23245	100	13680	0.40
3	3~	200	50	1310	3152	9.54	73	79	79	20485	200	12060	0.80
4	3~	200	50	1310	3360	10.20	78	85	84	15975	300	9400	1.20
5	3~	200	50	1100	1547	4.70	67	74	76	21590	0	12705	0.00
6	3~	200	50	1100	1719	5.21	67	74	75	19515	73	11485	0.29
7	3~	200	50	1100	1866	5.65	68	75	75	17205	143	10125	0.57
8	3~	200	50	1100	1985	6.00	73	80	79	13415	212	7895	0.85
9	3~	200	50	900	847	2.57	62	69	71	17665	0	10395	0.00
10	3~	200	50	900	942	2.85	62	69	70	15970	49	9400	0.20
11	3~	200	50	900	1022	3.09	63	70	70	14075	96	8285	0.39
12	3~	200	50	900	1087	3.29	68	75	74	10975	142	6460	0.57
13	3~	200	50	700	399	1.21	56	63	65	13740	0	8085	0.00
14	3~	200	50	700	443	1.34	56	63	64	12420	29	7310	0.12
15	3~	200	50	700	481	1.46	57	64	64	10945	58	6445	0.23
16	3~	200	50	700	512	1.55	62	69	68	8535	86	5025	0.35

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

