W3G500-CN33-84

EC axial fan

sickle-shaped blades (S series)

with round full nozzle

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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**W3G500-CN33-84**
Motor	**M3G112-GA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		fa
Status		prelim.
Speed (rpm)	min^{-1}	1600
Power consumption	W	680
Current draw	A	1.2
Max. back pressure	Pa	200
Max. back pressure	inH2O	0.8
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 ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	43.5	33.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		49.8	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1
09 Air flow q_v	m^3/h	6630
09 Pressure increase p_{fs}	Pa	218
10 Speed (rpm) n	min^{-1}	1610
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-121588

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Technical description

Weight	20.8 kg
Fan size	500 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Blade material	Press-fitted, painted sheet steel blank, sprayed with PP plastic
Fan housing material	Sheet steel, galvanized and coated with cement-gray plastic (RAL 7033)
Guard grille material	Steel, galvanized and coated with cement-gray plastic (RAL 7033)
Number of blades	5
Airflow direction	"A"
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F4-2
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 top
Condensation drainage holes	On stator side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Operation and alarm display - Selection of direction of rotation left/right - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - Alarm relay - Integrated PID controller - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - 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	Via terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE

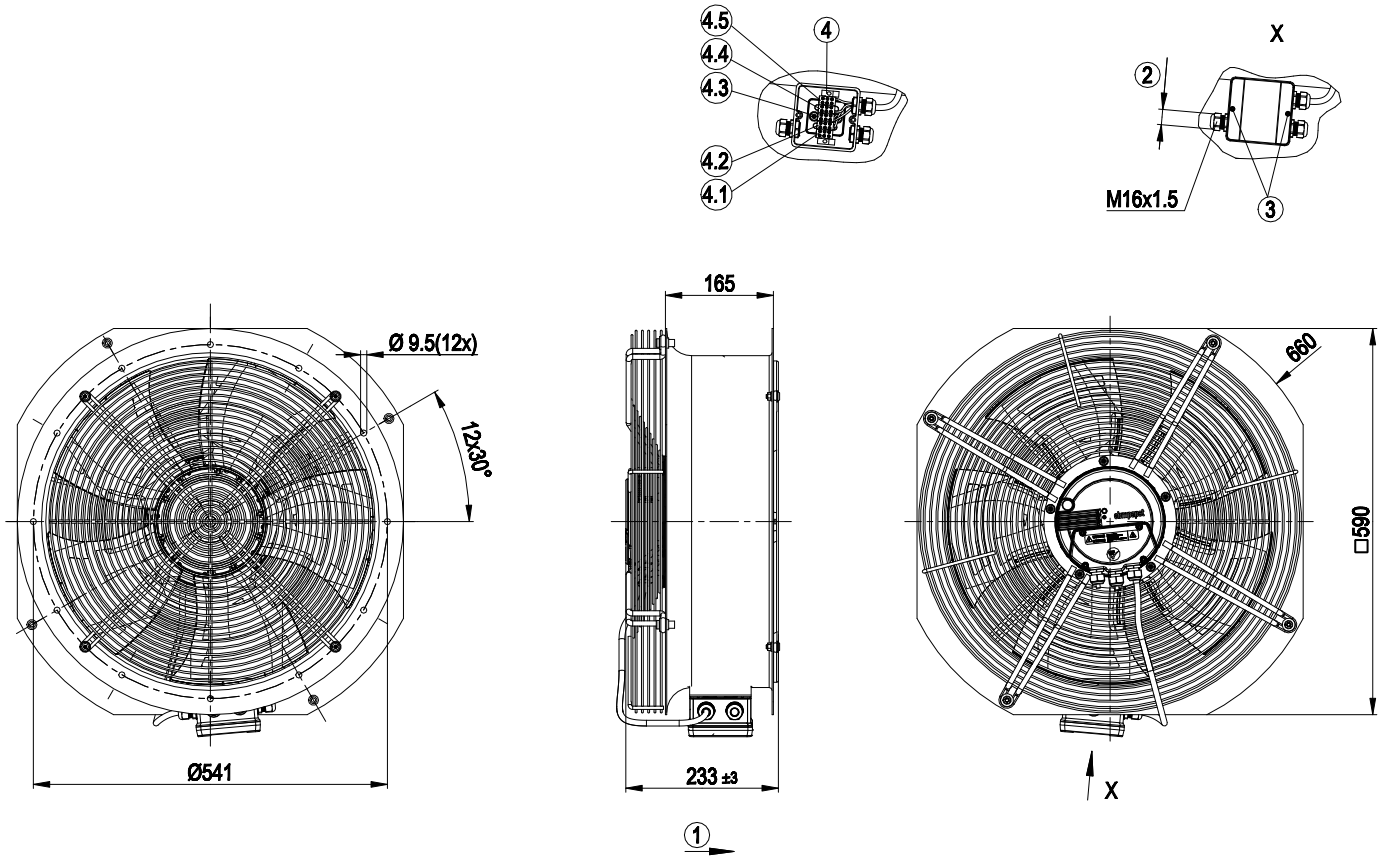
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Product drawing



1	Direction of air flow "A"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 2 ± 0.3 Nm
3	Tightening torque 2±0.3 Nm
4	Terminal strip
4.1	not used
4.2	L1 (black)
4.3	L2 (brown)
4.4	L3 (blue)
4.5	PE (green/yellow)

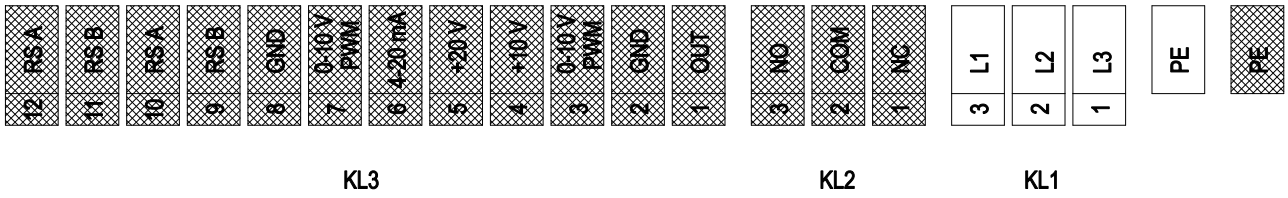
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Connection diagram



shaded gray => not brought out via leads

No.	Conn.	Designation	Function/assignment
		PE	Ground connection; PE connection
1	1	L3	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	2	L2	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	3	L1	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
2	1	NC	Status relay; floating status contact; break for failure
2	2	COM	Status relay; floating status contact; changeover contact; common connection; contact rating 250 VAC/ max. 2 A (AC1)/min. 10 mA
2	3	NO	Status relay; floating status contact; make for failure
3	1	OUT	Analog output 0-10 V; max. 5 mA; output of current motor modulation level
3	2	GND	Reference ground for control interface
3	3	0 - 10 V / PWM	Analog input (set value for open-loop and closed-loop speed control/measured value for external sensor control); 0 - 10 V; Ri = 100 kΩ; only usable as alternative to 4 - 20 mA input
3	4	+10 V	Fixed voltage output 10 VDC; +10 V + 15%; max. 10 mA; short-circuit-proof; power supply for ext. devices (e.g. potentiometers)
3	5	+20 V	Fixed voltage output 20 VDC; +20 V ± 20%; max. 50 mA; short-circuit-proof; power supply for ext. devices (e.g. sensors)
3	6	4 - 20 mA	Analog input (set value for open-loop and closed-loop speed control/measured value for external sensor control); 4 - 20 mA; Ri = 100 Ω; only usable as alternative to 0 - 10 V/PWM input
3	7	0 -10 V / PWM	Analog input (set value for open-loop and closed-loop speed control/measured value for external sensor control); 0 - 10 V; Ri = 100 kΩ; electrically directly in parallel with KL3.3; only usable as alternative to 4 - 20 mA input
3	8	GND	Reference ground for control interface
3	9	RS B	Bus connection RS485; RSB; ebm BUS
3	10	RS A	Bus connection RS485; RSA; ebm BUS
3	11	RS B	Bus connection RS485; RSB; ebm BUS, electrically directly in parallel with KL. 3.9
3	12	RS A	Bus connection RS485; RSA; ebm BUS; electrically directly in parallel with Kl.3.10

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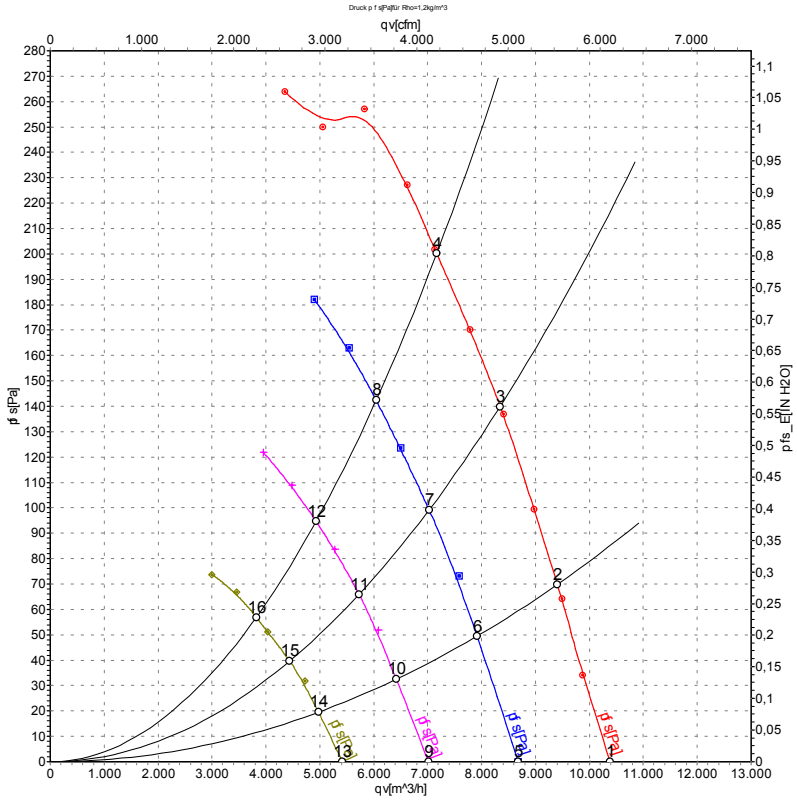
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Curves: Air performance 50 Hz



Measurement: LU-121588-1
Measurement: LU-125150-1
Measurement: LU-125151-1
Measurement: LU-125149-1

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	400	50	1600	680	1.20	72	80	80	10390	0	6115	0.00
2	400	50	1600	827	1.33	70	77	77	9405	70	5535	0.28
3	400	50	1600	907	1.41	68	75	75	8345	140	4910	0.56
4	400	50	1600	980	1.60	68	76	75	7170	200	4220	0.80
5	400	50	1350	434	0.78	69	76	76	8680	0	5110	0.00
6	400	50	1350	489	0.85	66	73	73	7915	51	4660	0.20
7	400	50	1350	538	0.91	64	71	71	7025	99	4135	0.40
8	400	50	1350	577	0.95	64	71	71	6045	142	3560	0.57
9	400	50	1100	256	0.51	64	72	71	7015	0	4130	0.00
10	400	50	1100	282	0.55	62	69	68	6420	33	3780	0.13
11	400	50	1100	308	0.60	59	67	66	5730	66	3370	0.26
12	400	50	1100	329	0.64	59	66	65	4930	95	2900	0.38
13	400	50	850	133	0.31	60	67	66	5415	0	3185	0.00
14	400	50	850	145	0.32	57	64	63	4975	20	2930	0.08
15	400	50	850	155	0.34	55	62	61	4445	40	2615	0.16
16	400	50	850	163	0.36	53	60	60	3820	57	2250	0.23

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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