W3G990-IC03-08

EC axial fan

sickled blades (S series)

with full round nozzle

W3G990-IC03-08 ebmpapst Datasheet
sales@fansco.com
www.fansco.com

Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

ErP2015 EXCEEDS THE NORM

Nominal data

Type	**W3G990-IC03-08**
Motor	**M3G200-QA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
Speed	min^{-1}	1030
Power input	W	6400
Current draw	A	9.8
Max. back pressure	Pa	270
Min. ambient temperature	°C	-60
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data according to ErP directive

Installation category	A
Efficiency category	Static
Variable speed drive	Yes
Specific ratio*	1.00

* Specific ratio = 1 + p_{fs} / 100 000 Pa

		Actual	Request 2013	Request 2015
Overall efficiency η_{es}	%	41.1	34.8	38.8
Efficiency grade N		42.3	36	40
Power input P_{ed}	kW	6.39		
Air flow q_v	m^3/h	30245		
Pressure increase p_{fs}	Pa	301		
Speed n	min^{-1}	1025		

Data definition with optimum efficiency. LU-141325
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

Mass	132 kg
Size	990 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium, coated in black
Material of blades	Die-cast aluminium
Material of mounting ring	Steel, coated in black plastic (RAL 9005)
Material of wall ring	Sheet steel, pre-galvanised and plastic-coated in sky blue (RAL 5015)
Number of blades	5
Blade angle	0°
Direction of air flow	"V"
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F4-1
Note ambient temperature	Operation at -40 °C to -60 °C only with heating element (pre-heat for at least 2 hours)
Max. permissible ambient motor temp. (transp./ storage)	+ 80 °C
Min. permissible ambient motor temp. (transp./storage)	Transport -40 °C / Storage -60 °C
Mounting position	Shaft horizontal or rotor on bottom
Condensate discharge holes	Rotor-side
Operation 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 - Input for sensor 0-10 V or 4-20 mA - External 24 V input (programming) - External release input - Alarm relay - Integrated PID controller - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
Electical heating	24 V AC/DC, any polarity, heating element screwed on outside, connection line attached
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical leads	Via terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	EAC; UL 1004-7 + 60730; C22.2 Nr.77 + CAN/CSA-E60730-1

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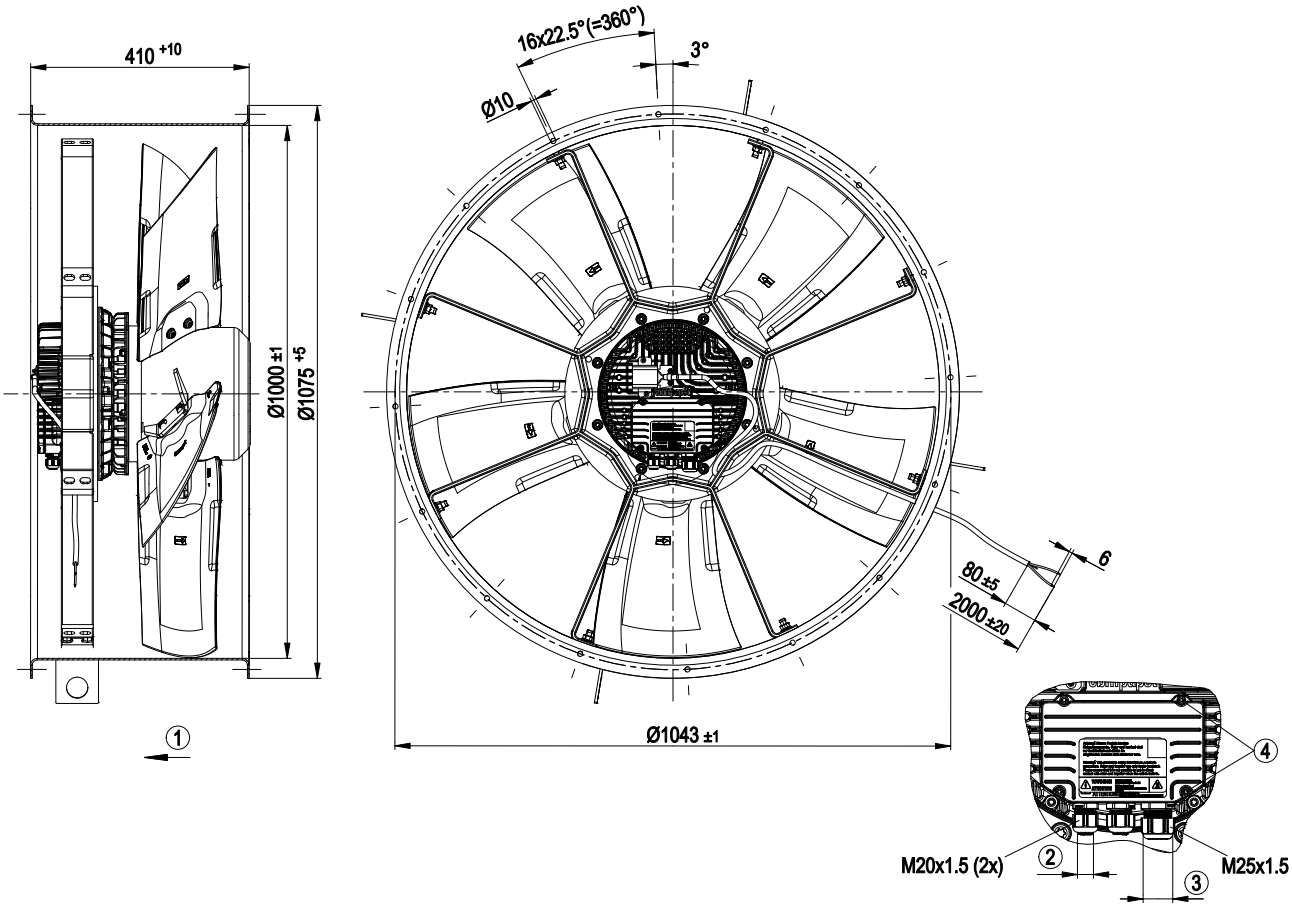
Product drawing



1	Direction of air flow "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4±0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6±0.9 Nm
4	Tightening torque 3.5±0.5 Nm

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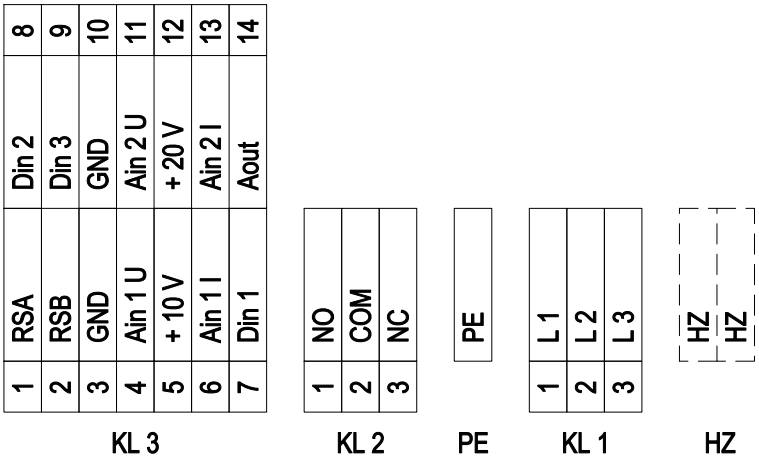
Connection screen



No.	Conn.	Designation	Function / assignment
KL 1	1	L1	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
KL 1	2	L2	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
KL 1	3	L3	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
PE		PE	Earth connection, PE connection
HZ		HZ	Connection of external heating element; 24 V AC/DC; any polarity; max. startup current 30 A; (connection line attached)
KL 2	1	NO	Status relay, floating status contact; make for failure
KL2	2	COM	Status relay; floating status contact; changeover contact; common connection; contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA
KL2	3	NC	Status relay, floating status contact; break for failure
KL 3	1	RSA	Bus connection RS-485; RSA; MODBUS RTU
KL 3	2	RSB	Bus connection RS-485; RSB; MODBUS RTU
KL 3	3 / 10	GND	Signal ground for control interface
KL 3	4	Ain1 U	Analogue input 1 (set value); 0-10 V; Ri = 100 kΩ; parametrisable curves; only usable as alternative to input Ain1 I
KL 3	5	+ 10 V	Fixed voltage output 10 VDC; +10 V ±3%; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. potentiometer)
KL 3	6	Ain1 I	Analogue input 1 (set value); 4-20 mA; Ri = 100 Ω; parametrisable curves; only usable as alternative to input Ain1 U
KL 3	7	Din1	Digital input 1: enabling of electronics; enabling: open pin or applied voltage 5 to 50 VDC; disabling: bridge to GND or applied voltage <1 VDC; reset function: triggers software reset after a level change to <1 V
KL 3	8	Din2	Digital input 2: parameter set switch 1/2; according to EEPROM setting, the valid/used parameter set is selectable per bus or per digital input DIN2. Parameter set 1: open pin or applied voltage 5 to 50 VDC; parameter set 2: bridge to GND or applied voltage <1 VDC
KL 3	9	Din3	Digital input 3: control characteristic of integrated controller; according to EEPROM setting, the control characteristic of the integrated controller is normally/inversely selectable per bus or per digital input; normal: open pin or applied voltage 5 to 50 VDC; inverse: bridge to GND or applied voltage <1 VDC
KL 3	11	Ain2 U	Analogue input 2; actual value 0-10 V; Ri = 100 kΩ; parametrisable curve; only usable as alternative to input Ain2 I
KL 3	12	+ 20 V	Fixed voltage output 20 VDC; +20 V +25/-10%; max. 50 mA; short-circuit-proof; power supply for external devices (e.g. sensors)
KL 3	13	Ain2 I	Analogue input 2; actual value: 4-20 mA; Ri = 100 Ω; parametrisable curve; only usable as alternative to input Ain2 U

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No.	Conn.	Designation	Function / assignment
KL 3	14	Aout	Analogue output 0-10 V; max. 5 mA; output of the current motor level control coefficient / motor speed. Parametrisable curve.

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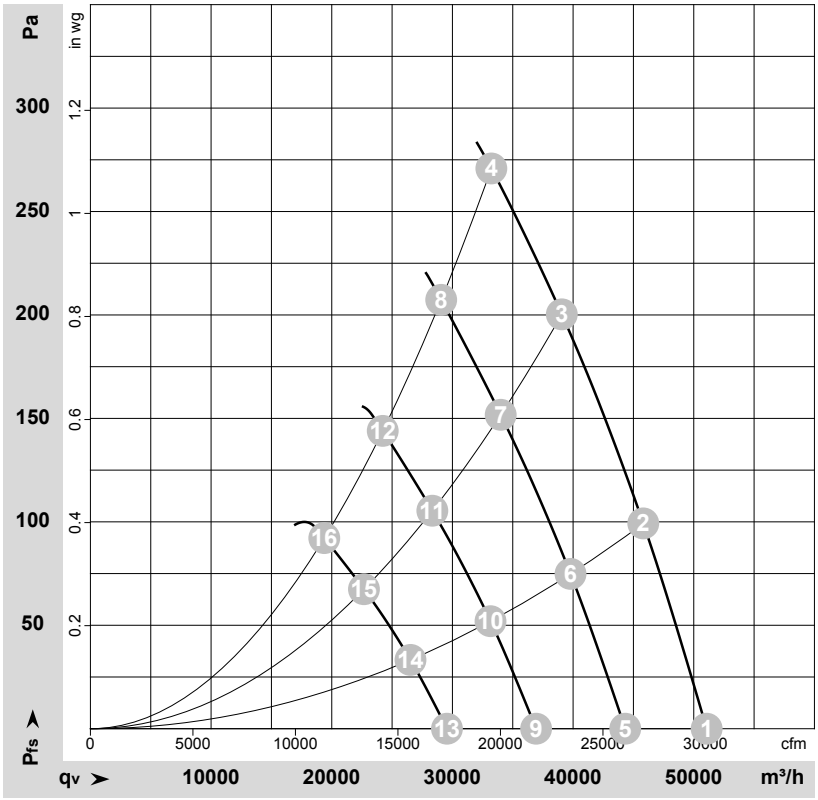
Charts: Air flow 50 Hz



ρ = 1,15 kg/m³ ± 2%

Measurement: LU-141325

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	U	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	LwA_{out}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa
1	400	50	1030	5307	8.00	91	99	100	51070	0
2	400	50	1030	5938	8.91	90	99	99	45815	100
3	400	50	1030	6339	9.50	90	98	99	39065	200
4	400	50	1030	6400	9.80	90	99	99	33225	270
5	400	50	900	3469	5.23	87	95	96	44320	0
6	400	50	900	3888	5.83	87	95	96	39785	75
7	400	50	900	4177	6.26	86	95	95	34000	152
8	400	50	900	4269	6.42	87	95	96	29070	208
9	400	50	750	2008	3.02	82	91	92	36935	0
10	400	50	750	2250	3.38	82	90	91	33155	52
11	400	50	750	2417	3.62	81	90	90	28335	106
12	400	50	750	2470	3.71	82	91	91	24225	144
13	400	50	600	1028	1.55	77	85	86	29550	0
14	400	50	600	1152	1.73	76	85	86	26525	33
15	400	50	600	1238	1.85	76	84	85	22670	68
16	400	50	600	1265	1.90	76	85	85	19380	92

U = Supply voltage · f = Frequency · n = Speed · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · LwA_{out} = Sound power level outlet side
qv = Air flow · p_{fs} = Pressure increase