W3G710-DS21-55

EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle, for agricultural ventilation

W3G710-DS21-55 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

Nominal data

Type	**W3G710-DS21-55**
Motor	**M3G150-FF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	1000-1100
Power input	W	1500
Current draw	A	6.5
Max. back pressure	Pa	150
Min. ambient temperature	°C	-25
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

		Actual	Request 2015
01 Overall efficiency η_{es}	%	41.3	34.9
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		46.4	40
05 Variable speed drive		Yes	

09 Power input P_{ed}	kW	1.57
09 Air flow q_v	m^3/h	13580
09 Pressure increase p_{fs}	Pa	161
10 Speed (rpm) n	min^{-1}	1010
11 Specific ratio*		1.00

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

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

LU-178874

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Technical features

Mass	40 kg
Size	710 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium, coated in black
Material of blades	Aluminium sheet insert (coated in black), sprayed with PP plastic
Material of mounting ring	Steel, galvanised and coated in black plastic (RAL9005)
Material of wall ring	Sheet steel, galvanised and coated in black plastic (RAL 9005)
Number of blades	5
Blade angle	0°
Direction of air flow	"A"
Direction of rotation	Counter-clockwise, seen on rotor
Type of protection	IP 55
Insulation class	"F"
Humidity (F)/environmental protection class (H)	H2+
Max. permissible ambient motor temp. (transp./ storage)	+ 80 °C
Min. permissible ambient motor temp. (transp./storage)	- 40 °C
Mounting position	Shaft horizontal or rotor on top; rotor on bottom on request
Condensate discharge holes	On the stator 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 - Tach output - Input for sensor 0-10 V or 4-20 mA - External 24 V input (programming) - External release input - Alarm relay - Integrated PID controller - Output limit - Motor current limit - PFC, active - 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
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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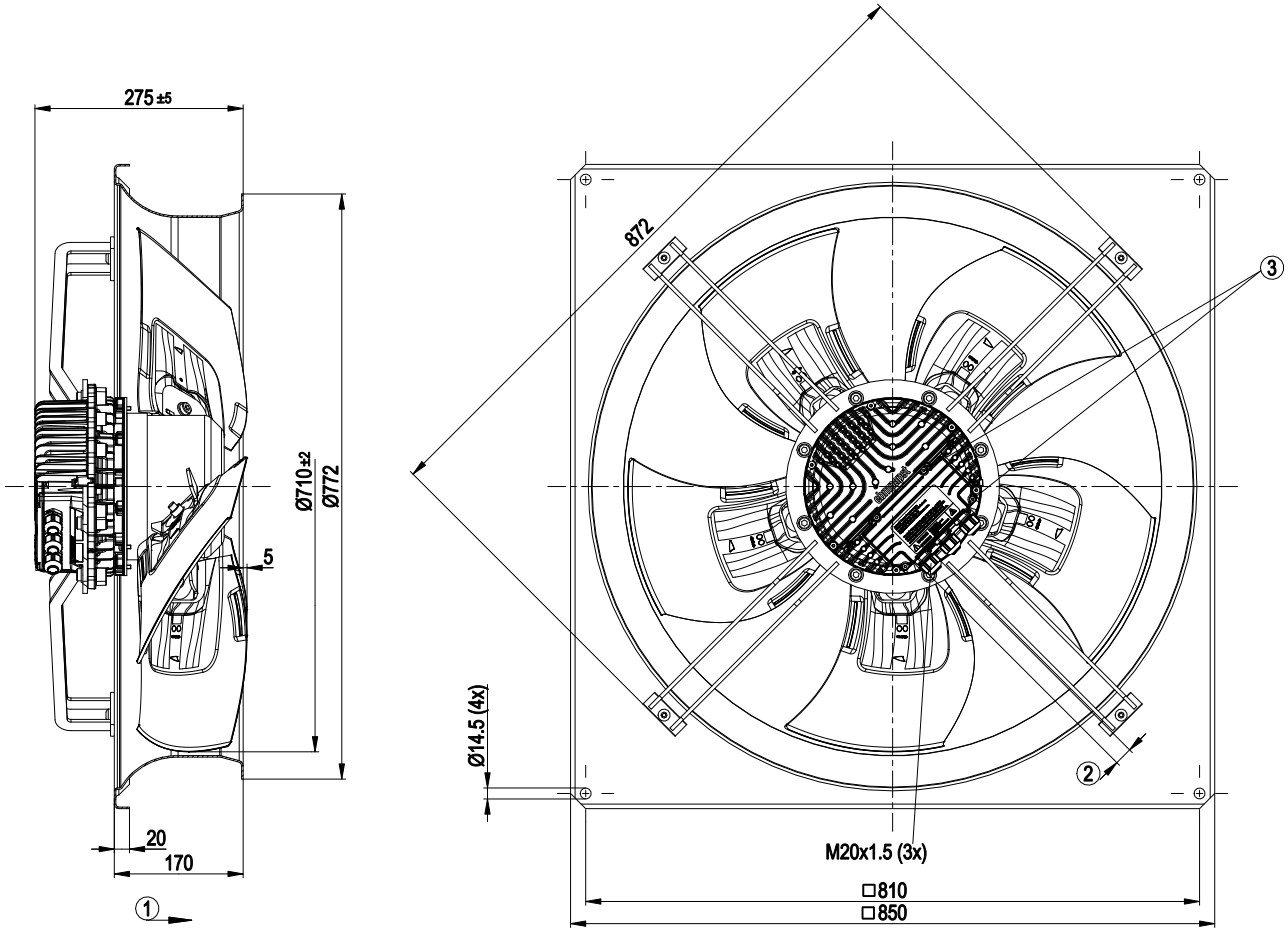
Product drawing



1	Direction of air flow "A"
2	Cable diameter min. 4 mm, max. 10 mm; tightening torque 4±0.6 Nm
3	Tightening torque 3.5±0.5 Nm

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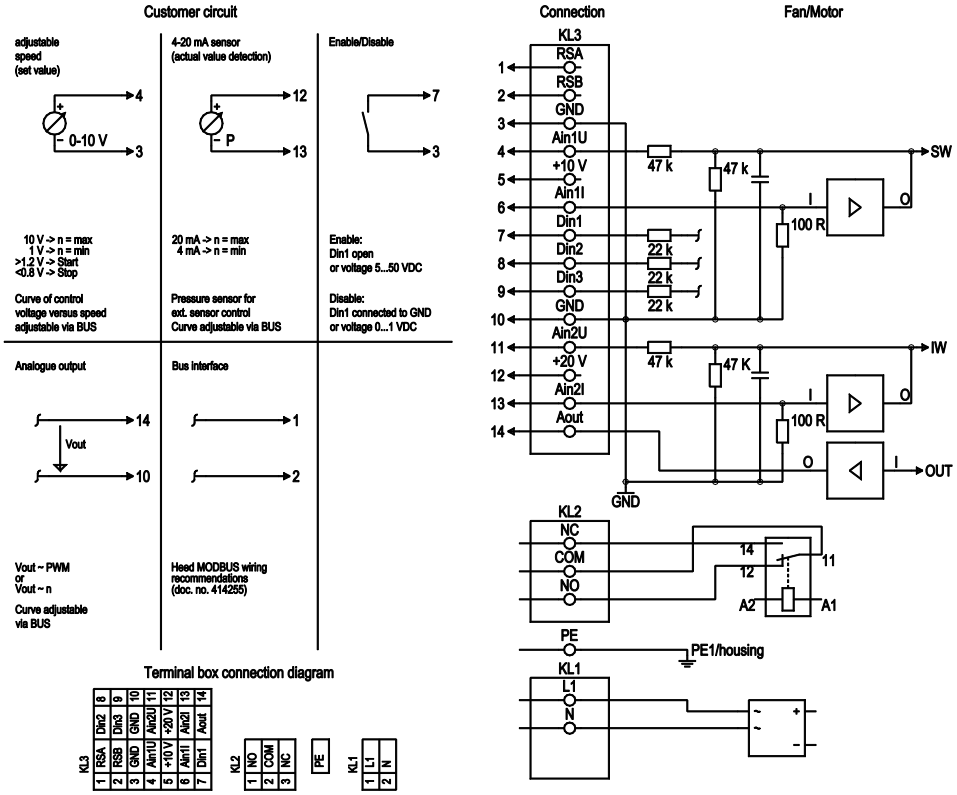
Connection screen



No.	Conn.	Designation	Function / assignment
KL1	1	L1	Mains connection, power supply; see technical data for nominal voltage range
KL1	2	N	Mains connection, power supply; see technical data for nominal voltage range
PE		PE	Earth connection, PE connection
KL2	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
KL3	1	RSA	Bus connection RS-485, RSA, MODBUS RTU; SELV
KL3	2	RSB	Bus connection RS-485, RSB, MODBUS RTU; SELV
KL3	3	GND	Reference earth for control interface; SELV
KL3	4	Ain1 U	Analogue input 1, set value: 0-10 V, Ri = 100 kΩ, parametrisable curve, only for use as alternative to input Ain1; SELV
KL3	5	+ 10 V	Fixed voltage output 10 VDC, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometer); SELV
KL3	6	Ain1 I	Analogue input 1, set value: 4-20 mA; Ri = 100 Ω, parametrisable curve, only for use as alternative to input Ain1 U; SELV
KL3	7	Din1	Digital input 1: Enabling of electronics, Enabling: Pin open or applied voltage 5-50 VDC Disabling: Bridge to GND or applied voltage <1 VDC Reset function: Triggers software reset after a level change to <1 VDC; SELV
KL3	8	Din2	Digital input 2: Parameter set 1/2 switching, depending on EEPROM setting, the valid/used parameter set can be selected via the bus or via the digital input DIN2. Parameter set 1: Pin open or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage <1 VDC; SELV

No.	Conn.	Designation	Function / assignment
KL3	9	Din3	Digital input 3: Controller function of integrated controller, depending on EEPROM setting, the controller function of the integrated controller can be selected via the bus or the digital input Din 3 normal: pin open or applied voltage 5-50 VDC inverse: bridge to GND or applied voltage <1 VDC; SELV
KL3	10	GND	Signal ground for control interface, SELV
KL3	11	Ain2 U	Analogue input 2, actual value: 0-10 V, Ri = 100 kΩ, parametrisable curve, only usable as alternative to input Ain2; SELV
KL3	12	+ 20 V	Fixed voltage output 20 VDC, +20 V +25/-10%, max. 50 mA, short-circuit-proof, power supply for ext. devices (e.g. sensors); SELV Alternatively: +24 VDC input for parametrisation without mains power
KL3	13	Ain2 I	Analogue input 2, actual value: 4-20 mA, Ri = 100 Ω, parametrisable curve, only for use as alternative to input Ain2 U; SELV
KL3	14	Aout	Analogue output 0-10 VDC, max. 5 mA, output of the current motor level control coefficient / motor speed parametrisable curve; SELV

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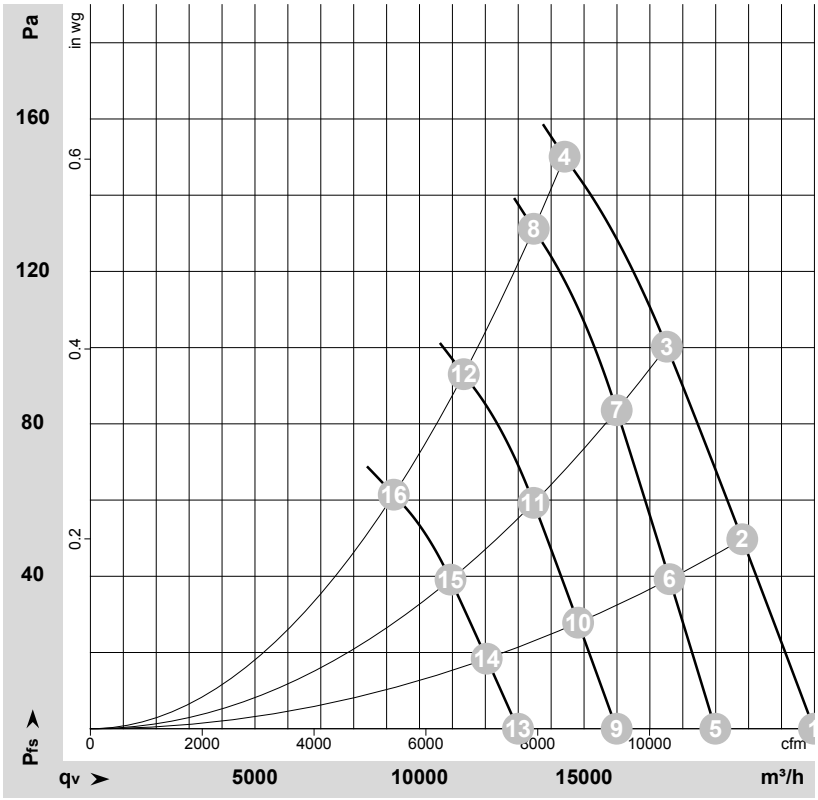
Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-178874-1

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

	Conn.	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	inH2O
1	Y	230	50	1100	1500	6.50	68	76	76	21985	0	12940	0.00
2	Y	230	50	1070	1500	6.50	67	74	75	19810	50	11660	0.20
3	Y	230	50	1040	1500	6.50	67	74	74	17515	100	10310	0.40
4	Y	230	50	1000	1500	6.50	68	75	74	14410	150	8480	0.60
5	Y	230	50	950	1023	4.46	64	72	73	18990	0	11175	0.00
6	Y	230	50	950	1098	4.79	64	71	72	17600	39	10360	0.16
7	Y	230	50	950	1191	5.19	64	71	71	15990	84	9415	0.34
8	Y	230	50	950	1284	5.60	66	73	72	13470	131	7930	0.53
9	Y	230	50	800	611	2.66	60	68	68	15990	0	9410	0.00
10	Y	230	50	800	656	2.86	59	67	67	14820	28	8725	0.11
11	Y	230	50	800	711	3.10	60	67	67	13465	59	7925	0.24
12	Y	230	50	800	767	3.34	62	69	68	11345	93	6675	0.37
13	Y	230	50	650	328	1.43	54	62	63	12995	0	7645	0.00
14	Y	230	50	650	352	1.53	54	62	62	12040	18	7085	0.07
15	Y	230	50	650	381	1.66	55	62	62	10940	39	6440	0.16
16	Y	230	50	650	411	1.79	57	64	63	9215	61	5425	0.24

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed (rpm) · 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 · q_V = Air flow · p_{fs} = Pressure increase