D3G404-AA02-01

EC centrifugal fan

forward curved, dual inlet

with housing (flange)



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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**D3G404-AA02-01**
Motor	**M3G150-NA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
Speed	min^{-1}	1050
Power input	W	3200
Current draw	A	4.9
Min. back pressure	Pa	300
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

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*	1.01

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

		Actual	Request 2013	Request 2015
Overall efficiency η_{es}	%	53.1	31.7	38.7
Efficiency grade N		58.4	37	44
Power input P_{ed}	kW	1.48		
Air flow q_v	m^3/h	4005		
Pressure increase p_{fs}	Pa	662		
Speed n	min^{-1}	1175		

Data definition with optimum efficiency. LU-108455
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

Mass	53 kg
Size	404 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Sheet steel, galvanised
Housing material	Sheet steel, galvanised
Motor suspension	Motor anti-vibration mounted on one side via brackets
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F4-1
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Shaft horizontal
Condensate discharge holes	None
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
EMC interference immunity	Acc. to EN 61000-6-2 (industrial environment)
EMC interference emission	Acc. to EN 61000-6-3 (household environment)
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Reverse polarity and locked-rotor protection
Cable exit	Variable
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	C22.2 Nr.77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730

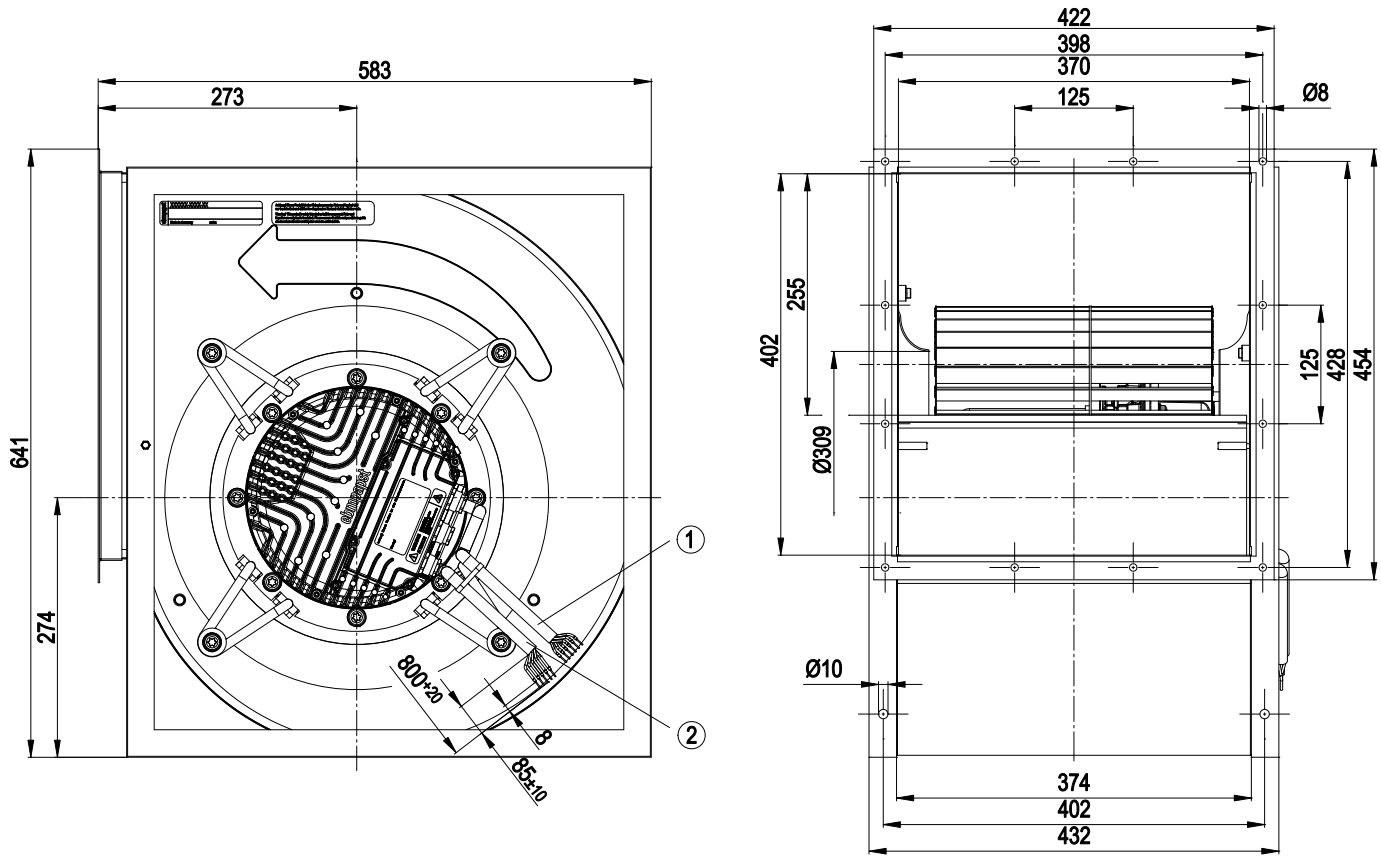
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Product drawing



1	Connecting line AWG16, 6 x crimped core-end sleeves
2	Connection line AWG20, 5 x crimped core-end sleeves

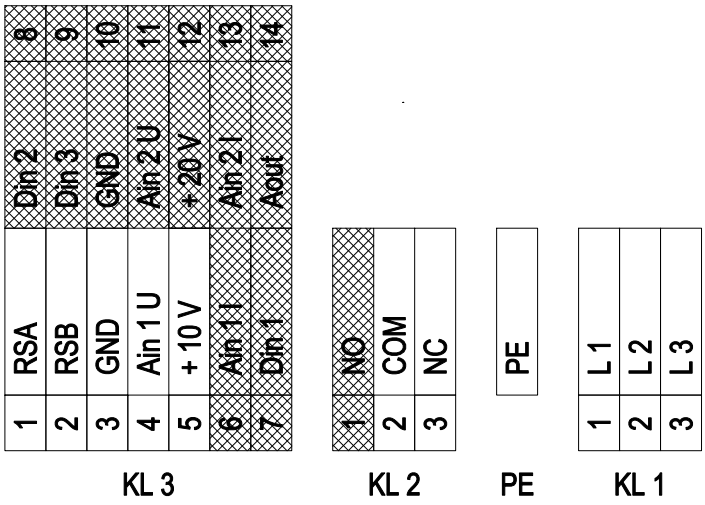
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Connection screen



grey shaded => not brought out via leads

No.	Conn.	Designation	Colour	Function / assignment
1	KL1	L1	black 1	Mains supply connection, supply voltage 3~380-480 VAC; 50/60 Hz
1	KL1	L2	black 2	Mains supply connection, supply voltage 3~380-480 VAC; 50/60 Hz
1	KL1	L3	black 3	Mains supply connection, supply voltage 3~380-480 VAC; 50/60 Hz
1	PE	PE	green/yellow	Earth connection, PE connection
	KL2	NO		Status relay, floating status contact; normally open; make for failure
1	KL2	COM	white 1	Status relay; floating status contact; changeover contact; common connection; contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA
1	KL2	NC	white 2	Status relay, floating status contact; break for failure
2	KL3	RSA	orange	Bus connection RS-485, RSA, MODBUS RTU; SELV
2	KL3	RSB	black	Bus connection RS-485, RSA, MODBUS RTU; SELV
2	KL3	GND	blue	Signal ground for control interface; SELV
2	KL3	Ain1 U	yellow	Analogue input 1, set value: 0-10 V, Ri = 100 kΩ, parametrisable curve, only usable as alternative to input Ain1; SELV
2	KL3	+ 10 V	red	Fixed voltage output 10 VDC, +10 V ±3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometer), SELV
	KL3	Ain1 I		Analogue input 1, set value: 4-20 mA; Ri = 100 Ω, parametrisable curve, only usable as alternative to input Ain1 U; SELV
	KL3	Din1		Digital input 1: enabling of electronics, enabling: open pin 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	Din2		Digital input 2: parameter set switch 1/2, according to EEPROM setting, the valid/used parameter set can be selected via bus or via digital input DIN2. Parameter set 1: open pin or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage <1 VDC; SELV
	KL3	Din3		Digital input 3: controller function of integrated controller, according to EEPROM setting, the controller function of the integrated controller is normally/inversely selectable per bus or per digital input normal: open pin or applied voltage 5-50 VDC inverse: bridge to GND or applied voltage <1 VDC; SELV
	KL3	Ain2 U		Analogue input 2, actual value: 0-10 V, Ri = 100 kΩ, parametrisable curve, only usable as alternative to input Ain2; SELV

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No.	Conn.	Designation	Colour	Function / assignment
	KL3	+ 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); SELV
	KL3	Ain2 I		Analogue input 2, actual value: 4-20 mA, Ri = 100 Ω, parametrisable curve, only usable as alternative to input Ain2 U; SELV
	KL3	Aout		Analogue output 0-10 VDC, max. 5 mA, output of the current motor level control coefficient / motor speed parametrisable curve; SELV

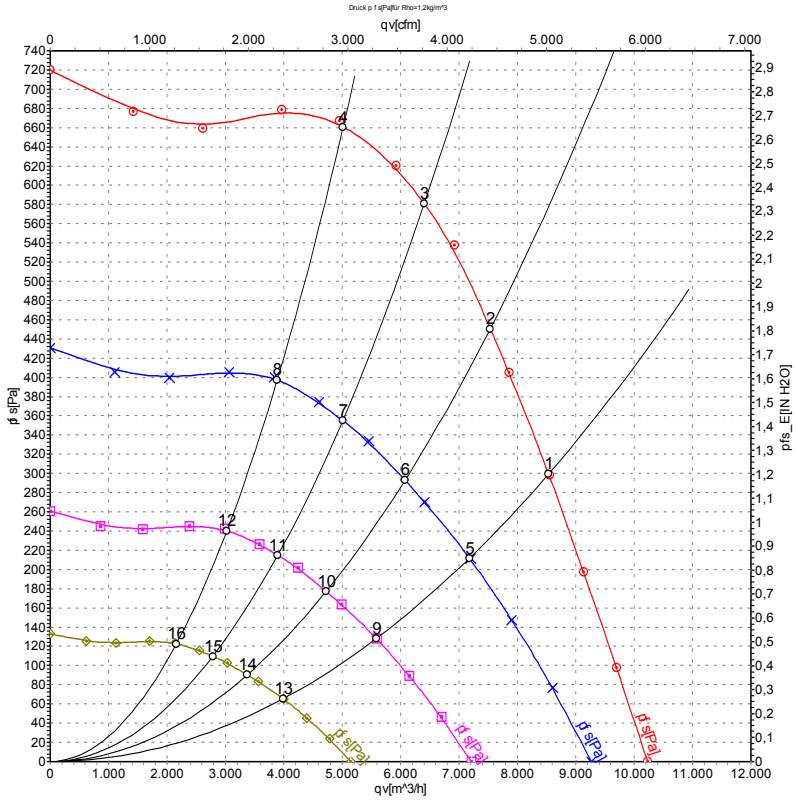
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Charts: Air flow 50 Hz



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	1050	3200	4.90	85	94	96	8535	300
2	400	50	1115	2870	4.60	83	92	94	7535	450
3	400	50	1150	2427	3.95	80	89	91	6405	580
4	400	50	1160	1836	3.09	77	86	88	5015	660
5	400	50	900	1935	3.13	81	90	92	7180	213
6	400	50	900	1509	2.42	78	87	89	6075	293
7	400	50	900	1162	1.89	75	84	86	5010	355
8	400	50	900	856	1.44	72	80	82	3890	399
9	400	50	700	910	1.47	76	85	86	5585	129
10	400	50	700	710	1.14	72	82	83	4725	177
11	400	50	700	547	0.89	69	78	80	3895	215
12	400	50	700	402	0.68	66	75	77	3025	242
13	400	50	500	332	0.54	68	77	79	3990	66
14	400	50	500	259	0.41	65	74	76	3375	90
15	400	50	500	199	0.32	62	71	73	2785	110
16	400	50	500	147	0.25	59	67	70	2160	123

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

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