D3G404-BB02-01

EC centrifugal fan

forward-curved, dual-intake

with housing (flange)

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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**D3G404-BB02-01**
Motor	**M3G150-NA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1000
Power consumption	W	3000
Current draw	A	4.8
Min. back pressure	Pa	375
Min. back pressure	inH2O	1.51
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

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}	%	54.8	39.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		59.7	44
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.71
09 Air flow q_v	m^3/h	6450
09 Pressure increase p_{fs}	Pa	491
10 Speed (rpm) n	min^{-1}	1000
11 Specific ratio*		1.01

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-121132

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Technical description

Weight	56.5 kg
Fan size	404 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet steel, galvanized
Housing material	Sheet steel, galvanized
Motor suspension	Motor mounted on brackets for one-sided vibration damping
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-1
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal
Condensation drainage holes	None
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 - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - 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
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Reverse polarity and locked-rotor protection
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	UL 1004-7 + 60730; EAC; C22.2 No.77 + CAN/CSA-E60730-1

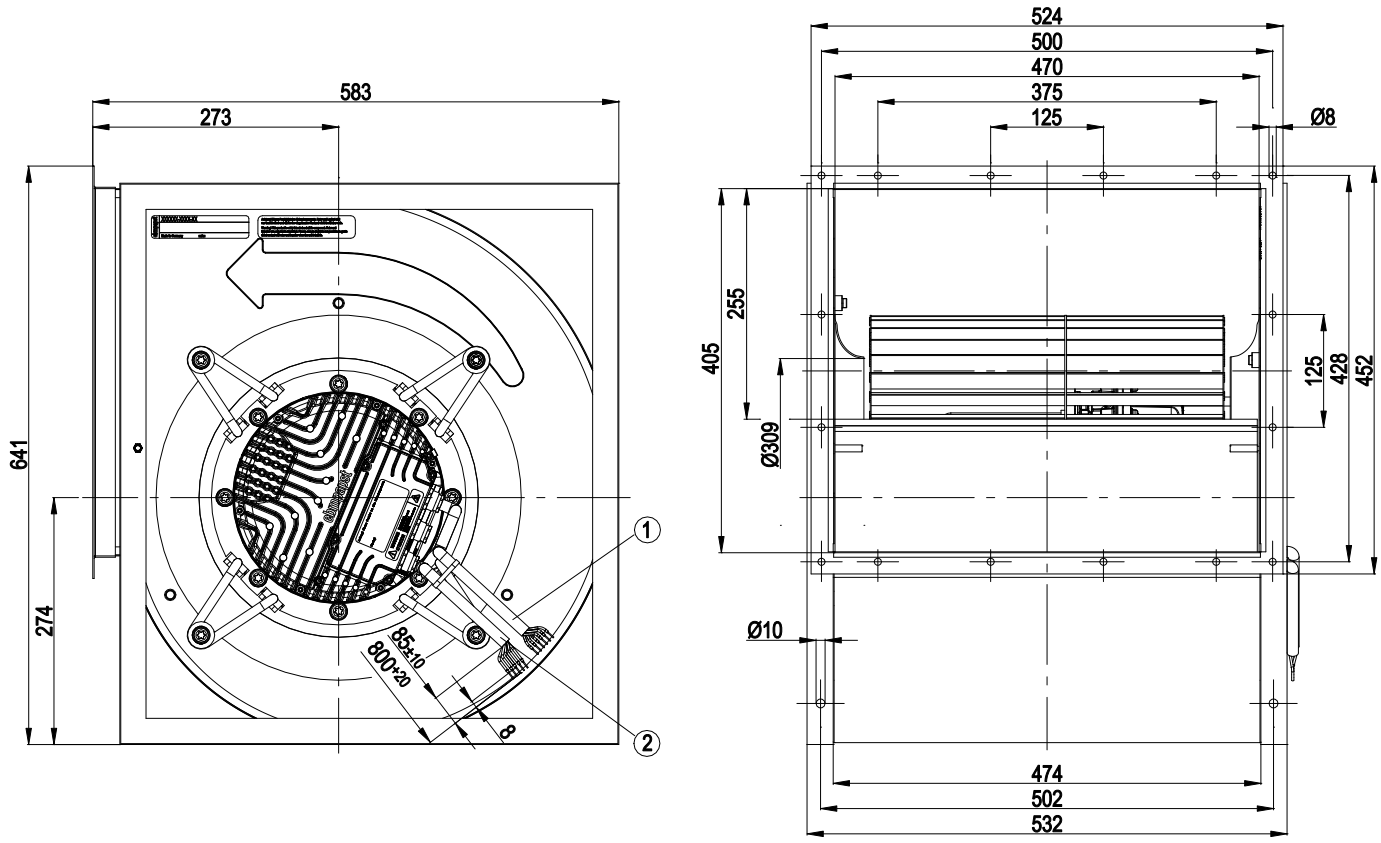
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Product drawing



1	Cable AWG16, 6x crimped ferrules
2	Cable AWG20, 5x crimped ferrules

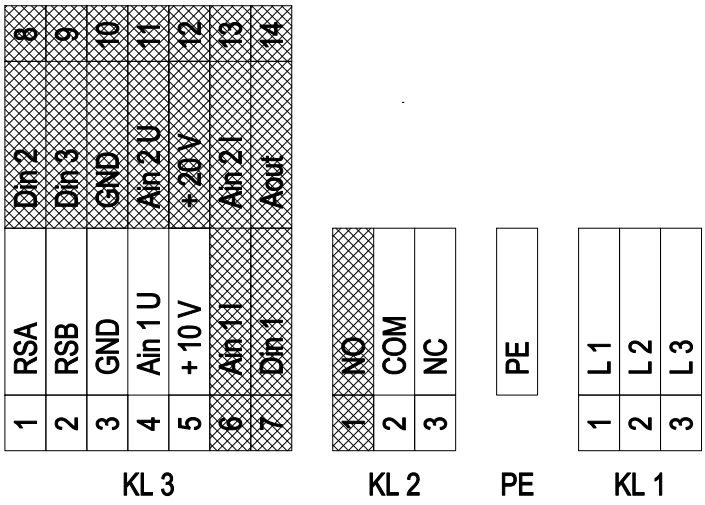
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Connection diagram



Shaded gray => not brought out via leads

No.	Conn.	Designation	Color	Function/assignment
1	KL1	L1	black 1	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	KL1	L2	black 2	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	KL1	L3	black 3	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	PE	PE	green/yellow	Ground connection, PE connection
	KL2	NO		Status relay, floating status contact; 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 RS485, RSA, MODBUS-RTU; SELV
2	KL3	RSB	black	Bus connection RS485, RSB, MODBUS-RTU; SELV
2	KL3	GND	blue	Reference ground for control interface; SELV
2	KL3	Ain1 U	yellow	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; 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. pot); SELV
	KL3	Ain1 I		Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1 U; SELV
	KL3	Din1		Digital input 1: Enable electronics, Enable: pin open or applied voltage 5-50 VDC disable: 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: Switching parameter sets 1/2, according to EEPROM setting, the valid or used parameter set can be selected via bus or via 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
	KL3	Din3		Digital input 3: according to EEPROM setting, the integrated controller's direction of action can be selected as normal/inverse via bus or digital input normal: pin open or applied voltage 5-50 VDC inverse: bridge to GND or applied voltage < 1 VDC; SELV
	KL3	Ain2 U		Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2 I; SELV
	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

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No.	Conn.	Designation	Color	Function/assignment
	KL3	Ain2 I		Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2 U; SELV
	KL3	Aout		Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV

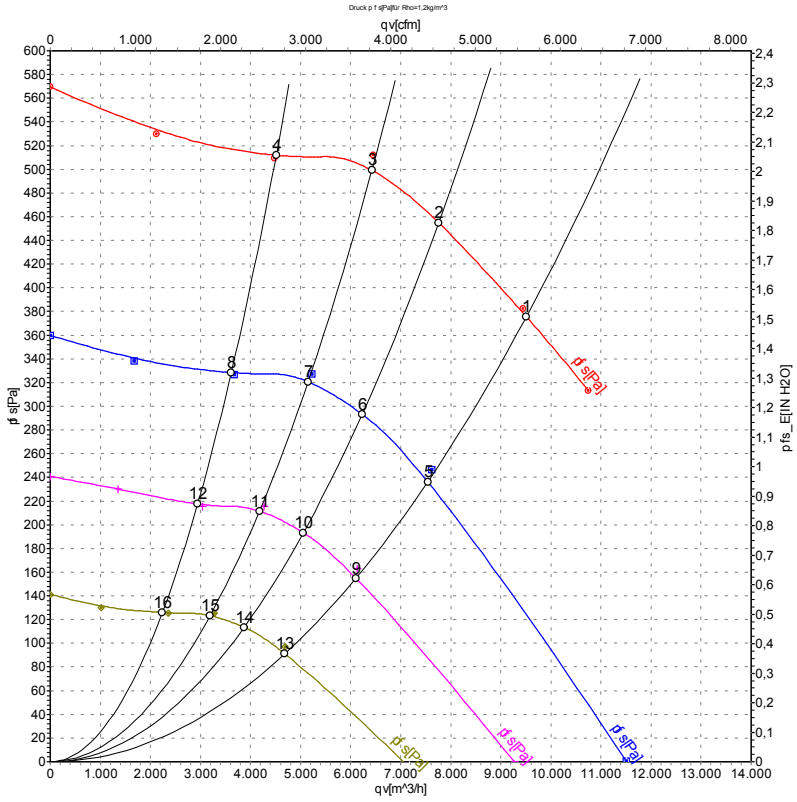
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Curves: Air performance 50 Hz



Measurement: LU-121132-1
Measurement: LU-108742-1
Measurement: LU-108743-1
Measurement: LU-108744-1

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	1000	3000	4.80	79	88	91	9510	375	5595	1.51
2	400	50	1000	2251	3.43	77	85	89	7760	450	4565	1.81
3	400	50	1000	1712	2.61	75	83	87	6425	500	3780	2.01
4	400	50	1000	1199	1.84	72	80	83	4515	510	2655	2.05
5	400	50	800	1436	2.19	73	82	85	7540	249	4440	1.00
6	400	50	800	1127	1.74	70	79	82	6230	293	3665	1.18
7	400	50	800	876	1.38	68	76	81	5150	327	3030	1.31
8	400	50	800	613	1.00	66	74	77	3615	327	2130	1.31
9	400	50	650	782	1.24	68	76	79	6105	164	3595	0.66
10	400	50	650	609	1.01	64	73	76	5055	193	2975	0.77
11	400	50	650	469	0.82	62	71	74	4180	215	2460	0.86
12	400	50	650	344	0.64	60	69	71	2945	216	1730	0.87
13	400	50	500	358	0.68	60	70	71	4685	97	2755	0.39
14	400	50	500	288	0.56	58	67	69	3875	113	2280	0.45
15	400	50	500	231	0.47	56	65	67	3190	125	1880	0.50
16	400	50	500	172	0.37	54	63	64	2240	126	1320	0.51

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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