D3G404-BB02-01

EC centrifugal fan

forward curved, dual inlet

with housing (flange)

D3G404-BB02-01 ebmpapst Datasheet
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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
Type of data definition		ml
Speed	min^{-1}	1000
Power input	W	3000
Current draw	A	4.8
Min. back pressure	Pa	375
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}		54.8	32.1	39.1
Efficiency grade N		59.7	37	44
Power input P_{ed}	kW	1.71		
Air flow q_v	m^3/h	6450		
Pressure increase p_{fs}	Pa	491		
Speed n	min^{-1}	1000		

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

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Technical features

Mass	56.5 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 - 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	UL 1004-7 + 60730; GOST; C22.2 Nr.77 + CAN/CSA-E60730-1

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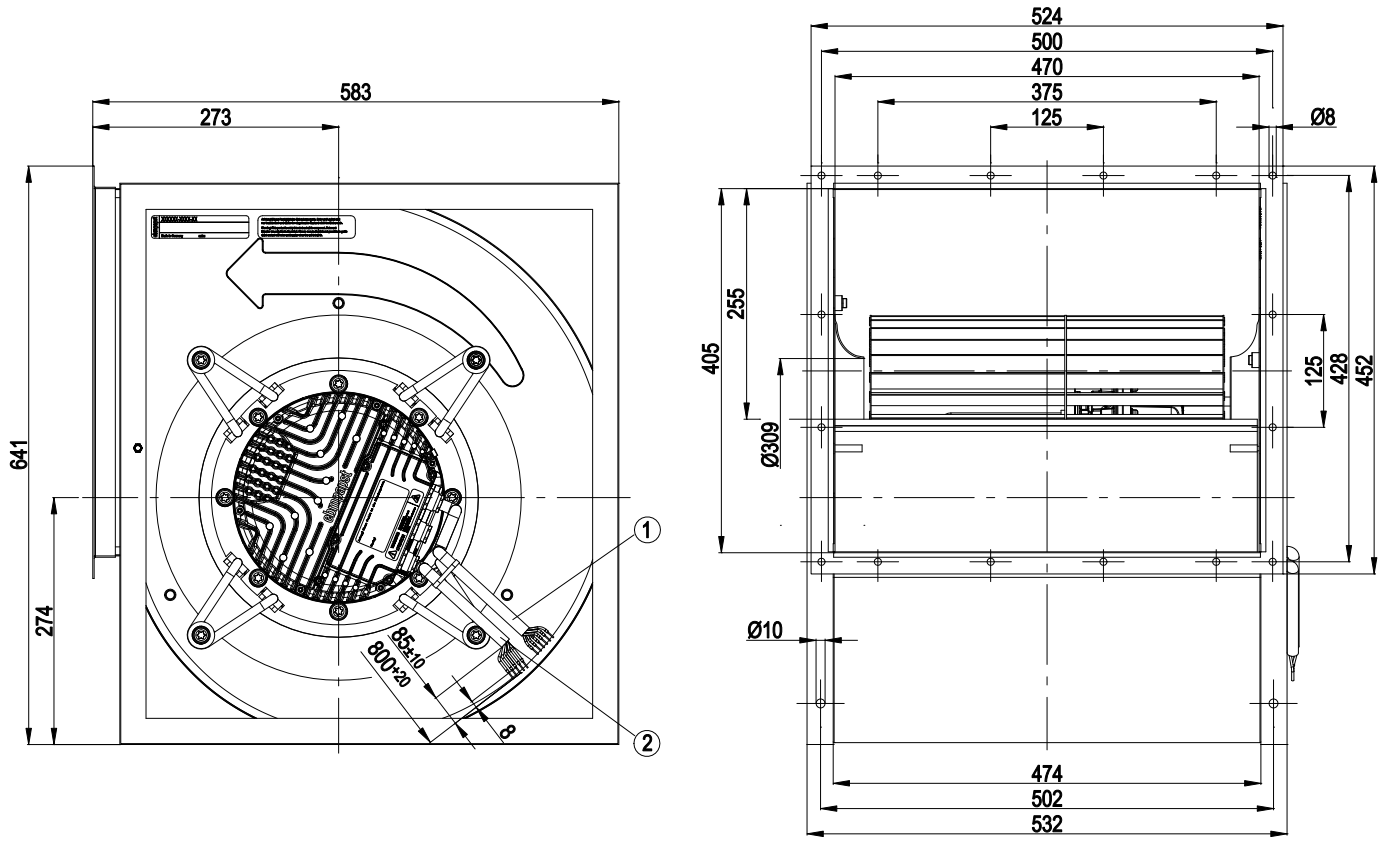
Product drawing



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

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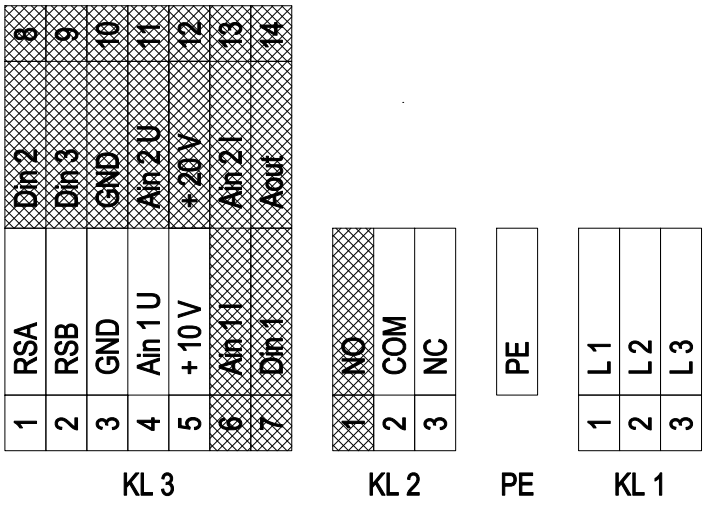
Connection screen



grey shaded => not brought out via leads

Line	No.	Signal	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 RS485; RSA; MODBUS RTU
2	KL3	RSB	black	Bus connection RS485; RSB; MODBUS RTU
2	KL3	GND	blue	Signal ground for control interface
2	KL3	Ain1 U	yellow	Analogue input 1 (set value); 0-10 V; Ri= 100 kΩ; parametrisable curves; only usable as alternative to input Ain1 I
2	KL3	+ 10 V	red	Fixed voltage output 10 VDC; + 10 V +/-3%; max. 10 mA; short circuit proof; power supply for ext. devices (e.g. potentiometer)
	KL	Ain1 I		Analogue input 1 (set value); 4-20 mA; Ri= 100 Ω; parametrisable curves; only usable as alternative to input Ain1 U
	KL3	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
	KL3	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
	KL3	Din3		Digital input 3: Control characteristic of the 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 (control deviation = actual sensor value - set value) inverse: bridge to GND or applied voltage < 1 VDC (control deviation = set value - actual sensor value)
	KL3	Ain2 U		Analogue input 2; actual sensor value 0-10 V; Ri= 100 kΩ; parametrisable curve; only usable as alternative to input Ain2 I
	KL3	+ 20 V		Fixed voltage output 20 VDC; + 20V +25/-10%; max. 50 mA; short circuit proof; supply voltage for ext. devices (e.g. sensors)

Line	No.	Signal	Colour	Function / assignment
	KL3	Ain2 I		Analogue input 2; actual sensor value 4-20 mA; Ri= 100 Ω; parametrisable curve; only usable as alternative to input Ain2 U
	KL3	Aout		Analogue output 0-10 V; max. 5 mA; output of the current motor level control coefficient/ of the current motor speed. Parametrisable curve.

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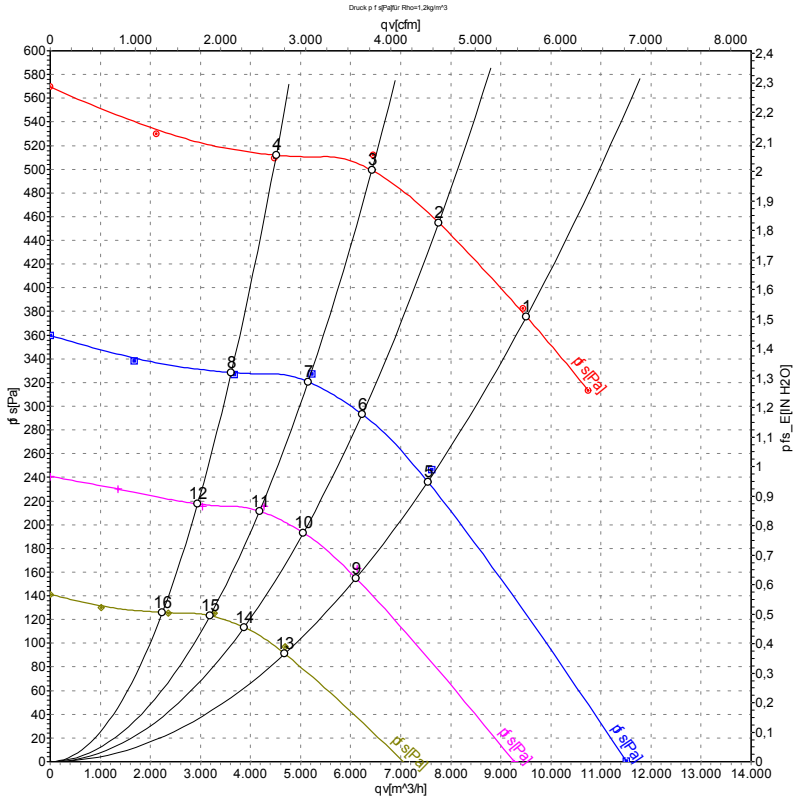
Charts: Air flow 50 Hz



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

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	1000	3000	4.80	79	88	91	9510	375
2	400	50	1000	2251	3.43	77	85	89	7760	450
3	400	50	1000	1712	2.61	75	83	87	6425	500
4	400	50	1000	1199	1.84	72	80	83	4515	510
5	400	50	800	1436	2.19	73	82	85	7540	249
6	400	50	800	1127	1.74	70	79	82	6230	293
7	400	50	800	876	1.38	68	76	81	5150	327
8	400	50	800	613	1.00	66	74	77	3615	327
9	400	50	650	782	1.24	68	76	79	6105	164
10	400	50	650	609	1.01	64	73	76	5055	193
11	400	50	650	469	0.82	62	71	74	4180	215
12	400	50	650	344	0.64	60	69	71	2945	216
13	400	50	500	358	0.68	60	70	71	4685	97
14	400	50	500	288	0.56	58	67	69	3875	113
15	400	50	500	231	0.47	56	65	67	3190	125
16	400	50	500	172	0.37	54	63	64	2240	126

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