D3G404-AA02-05

EC centrifugal fan

forward curved, dual inlet

with housing (flange)

D3G404-AA02-05 ebmpapst Datasheet
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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**D3G404-AA02-05**
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}	900
Power input	W	2100
Current draw	A	3.2
Min. back pressure	Pa	200
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.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

Mass	55 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	UL 1004-7 + 60730; C22.2 Nr.77 + CAN/CSA-E60730-1

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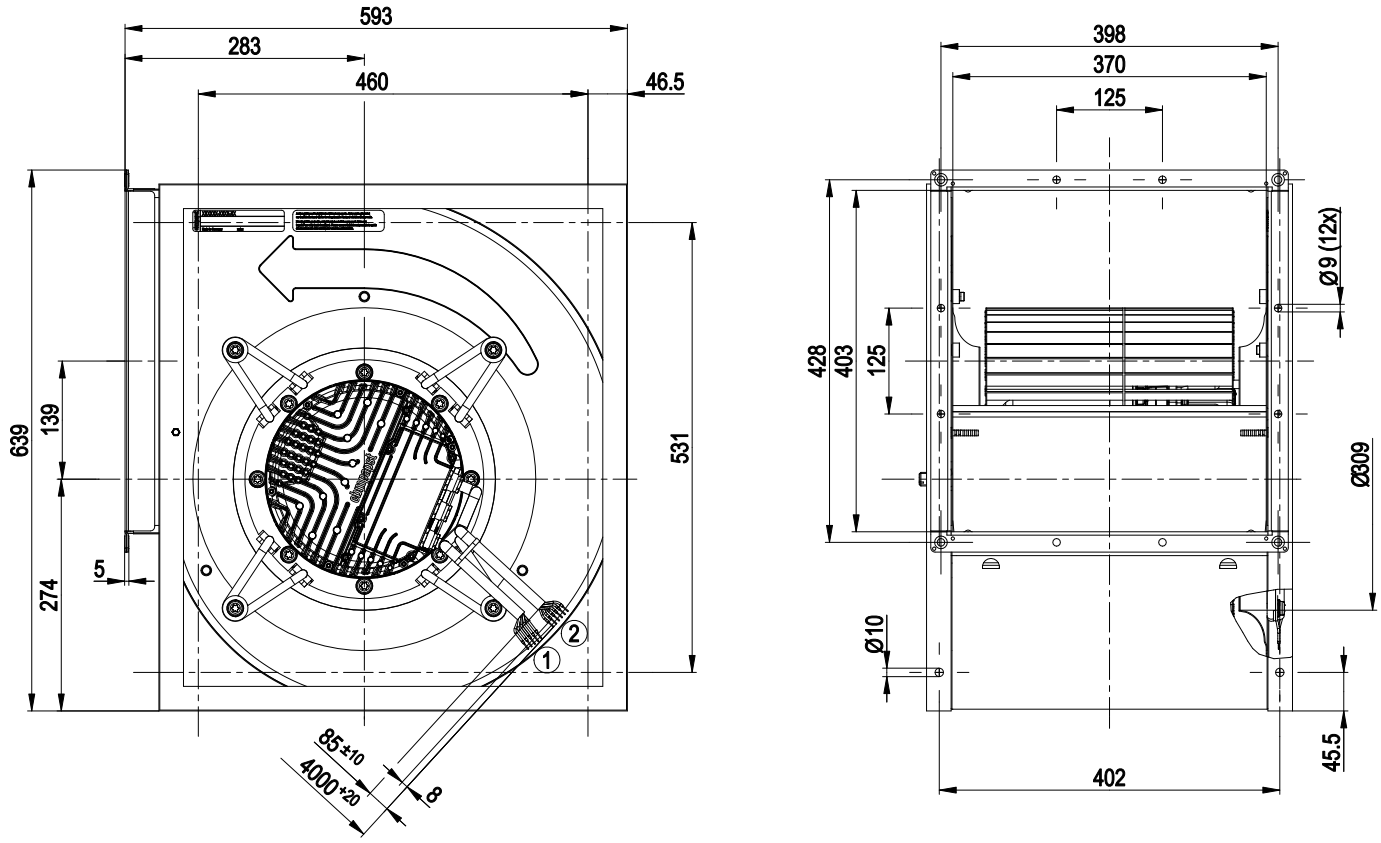
Product drawing



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

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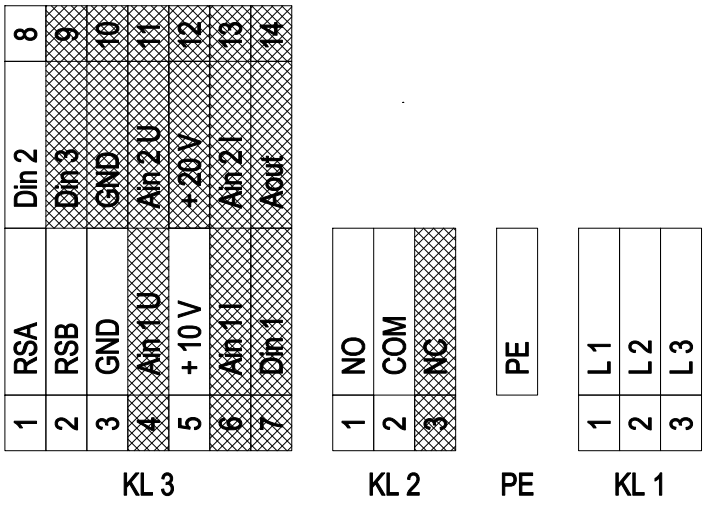
Connection screen



grey shaded => not brought out via leads

Line	No.	Signal	Colour	Function / assignment
KL 1	1	L1	black 1	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
KL 1	2	L2	black 2	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
KL 1	3	L3	black 3	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
PE		PE	green/yellow	Earth connection, PE connection
KL 2	1	NO	white 2	Status relay, floating status contact; normally open; make for failure
KL2	2	COM	white 1	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	orange	Bus connection RS485; RSA; MODBUS RTU
KL 3	2	RSB	black	Bus connection RS485; RSB; MODBUS RTU
KL 3	3 / 10	GND	blue	Reference 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	red	Fixed voltage output 10 VDC; + 10 V +/-3%; max. 10 mA; short circuit proof; power supply for ext. 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	yellow	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 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)
KL 3	11	Ain2 U		Analogue input 2; actual sensor 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; + 20V +25/-10%; max. 50 mA; short circuit proof; supply voltage for ext. devices (e.g. sensors)

Line	No.	Signal	Colour	Function / assignment
KL 3	13	Ain2 I		Analogue input 2; actual sensor value 4-20 mA; Ri= 100 Ω; parametrisable curve; only usable as alternative to input Ain2 U
KL 3	14	Aout		Analogue output 0-10 V; max. 5 mA; output of the actual motor control factor (output voltage of electronics)/ of the actual motor speed. Parametrisable curve.

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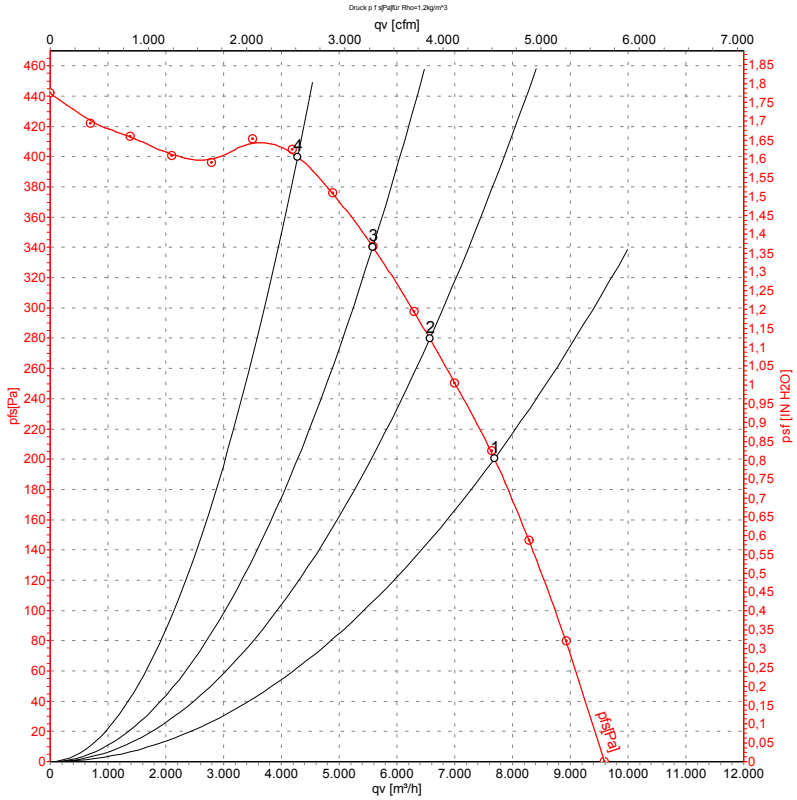
Charts: Air flow 50 Hz



Measurement: LU-141271

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	qv	p_{fs}
	V	Hz	min^{-1}	W	A	m^3/h	Pa
1	400	50	900	2100	3.20	7685	202
2	400	50	900	1677	2.56	6570	280
3	400	50	900	1340	2.06	5580	340
4	400	50	900	953	1.54	4280	400

U = Supply voltage · f = Frequency · n = Speed · P_{ed} = Power input · I = Current draw · qv = Air flow · p_{fs} = Pressure increase