K3G500-AP28-K1

EC centrifugal module - RadiPac

backward-curved, single-intake

with housing

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Nominal data

Type	**K3G500-AP28-K1**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min^{-1}	1780
Power consumption	W	3000
Current draw	A	4.6
Min. back pressure	Pa	200
Min. back pressure	in. wg	0.8
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	55

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to Commission Regulation (EU) 327/2011

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	63.5	56.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		69	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	2.98
09 Air flow q_v	m^3/h	8085
09 Pressure increase p_{fs}	Pa	803
10 Speed (rpm) n	min^{-1}	1780
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-197532

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Technical description

Size	500 mm
Motor size	150
Impeller material	Sheet aluminum
Housing material	Sheet steel, painted black
Support plate material	Sheet steel, galvanized
Spacer material	Aluminum
Inlet nozzle material	Sheet steel, galvanized
Number of blades	7
Direction of rotation	Clockwise, viewed toward shaft
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display - External 24 V input (parameter setting) - 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 - Temperature derating - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60335-1; EN 61800-5-1; CE
Approval	EAC

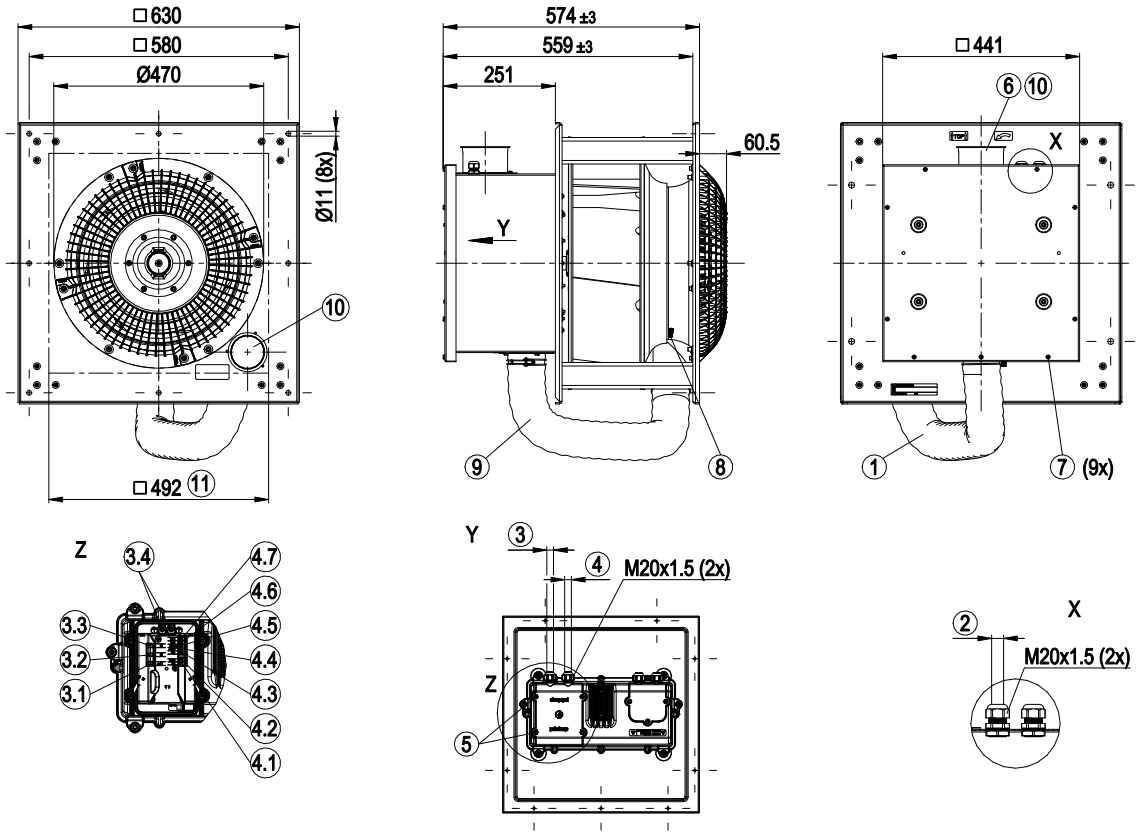
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Product drawing



Y	Housing opened
1	Installation position: Shaft horizontal (only fit air hose at bottom as illustrated) or rotor on bottom
2	Cable diameter min. 8 mm, max. 12 mm, tightening torque 2.5 ± 0.4 Nm
3	Cable diameter min. 8 mm, max. 12 mm, tightening torque 1.8±0.3 Nm
3.1	L1
3.2	L2
3.3	L3
3.4	PE
4	Cable diameter min. 8 mm, max. 12 mm, tightening torque 1.8±0.3 Nm
4.1	NC
4.2	COM
4.3	+10 V
4.4	0-10 V
4.5	GND
4.6	RSA
4.7	RSB
5	Tightening torque 3 ± 0.5 Nm
6	Customer ventilation port DN 100
7	Tightening torque 3.5 ± 0.5 Nm
8	Inlet ring with pressure tap (k-factor: 281)
9	Spiral hose dia. 80 mm, PVC – coated polyester fabric (self-extinguishing)
10	Remove caps prior to start-up
11	Installation aperture

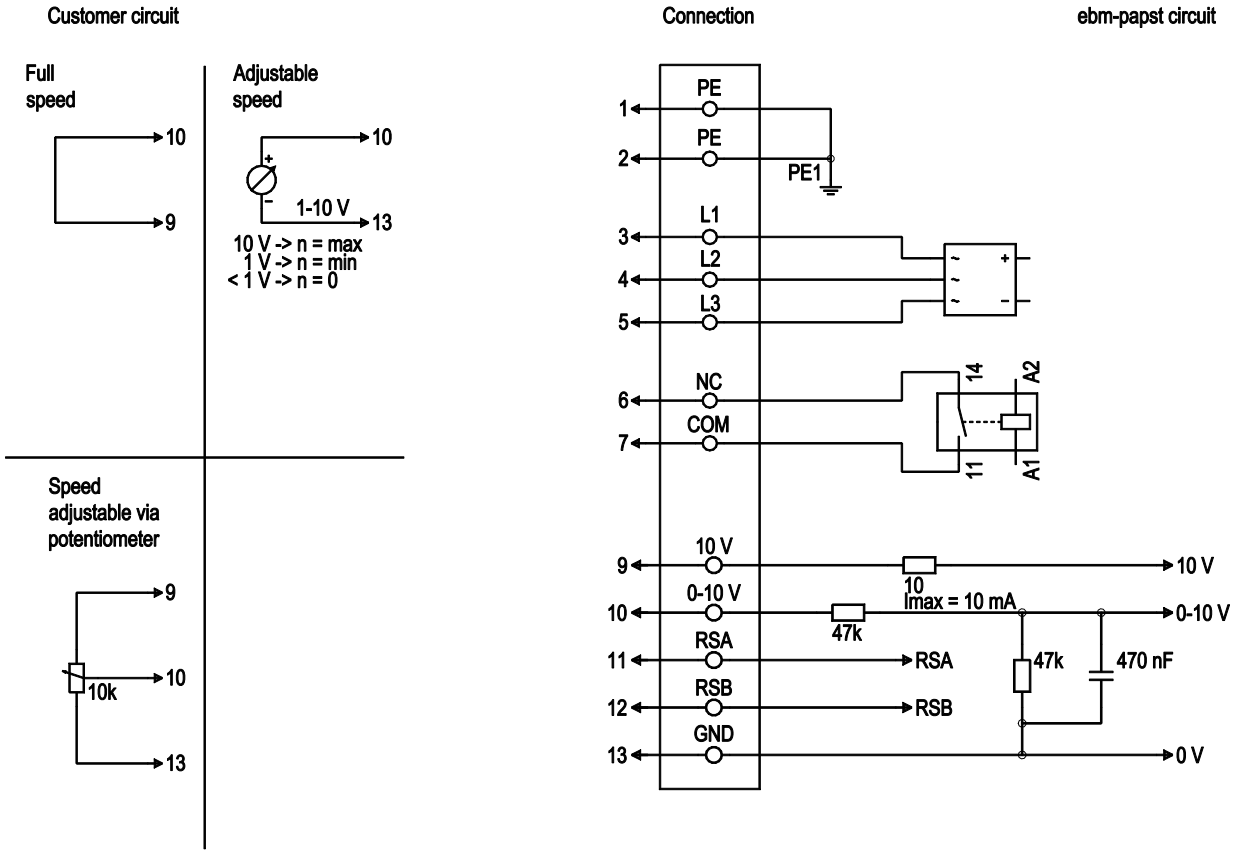
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1, 2	PE	green/yellow	Protective earth
1	3, 4, 5	L1, L2, L3	black	Power supply 50 / 60 Hz
1	6	NC	white 1	Status relay, floating status contact, break for failure; contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and basic insulation on control interface side (or reinforced insulation on control interface side up to 250 VAC potential difference)
1	7	COM	white 2	Status relay, floating status contact, break for failure; contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and basic insulation on control interface side (or reinforced insulation on control interface side up to 250 VAC potential difference)
2	9	+10 V	red	Fixed voltage output 10 VDC, SELV, +10 V ±3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); fixed voltage input 24 VDC for setting parameters via MODBUS without line voltage supply
2	10	0-10 V	yellow	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	13	GND	blue	Reference ground for control interface, SELV

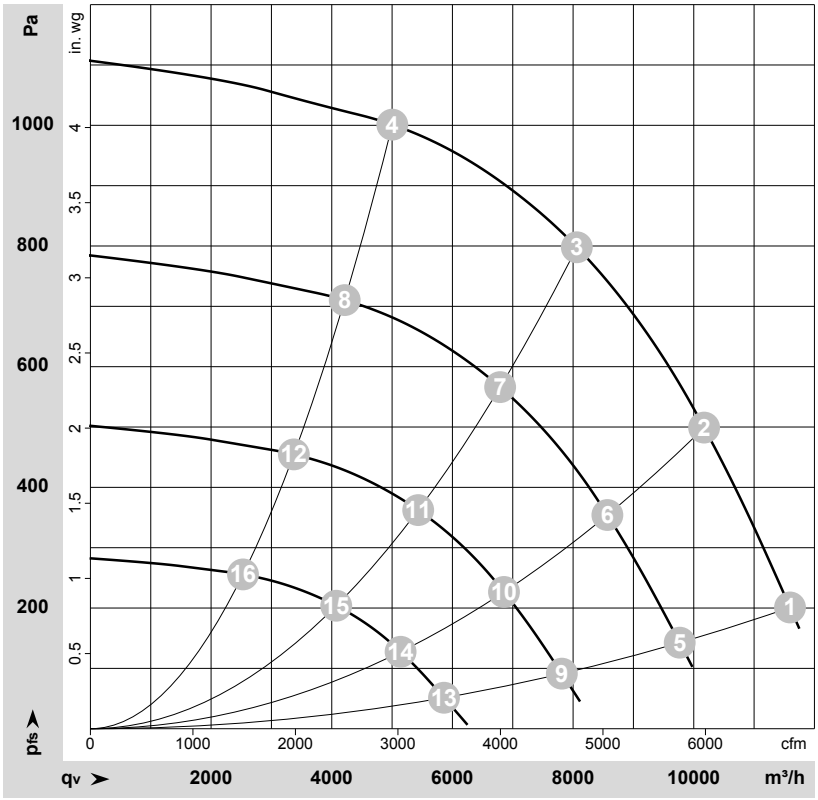
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-197532-1

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

	Wired	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	in. wg
1	3~	400	50	1780	2160	3.37	82	89	93	11595	200	6825	0.80
2	3~	400	50	1780	2638	4.08	78	86	89	10170	500	5985	2.01
3	3~	400	50	1780	3000	4.60	76	84	87	8060	800	4745	3.21
4	3~	400	50	1780	2681	4.14	76	84	88	5005	1000	2945	4.01
5	3~	400	50	1500	1290	2.02	78	85	88	9765	144	5750	0.58
6	3~	400	50	1500	1577	2.44	73	82	85	8570	355	5045	1.43
7	3~	400	50	1500	1780	2.74	72	80	83	6790	571	3995	2.29
8	3~	400	50	1500	1602	2.48	72	80	84	4215	712	2480	2.86
9	3~	400	50	1200	661	1.03	72	79	83	7815	92	4600	0.37
10	3~	400	50	1200	807	1.25	68	76	79	6855	227	4035	0.91
11	3~	400	50	1200	912	1.40	66	74	77	5435	365	3200	1.47
12	3~	400	50	1200	820	1.27	66	74	78	3370	456	1985	1.83
13	3~	400	50	900	279	0.44	65	72	76	5860	52	3450	0.21
14	3~	400	50	900	341	0.53	61	69	72	5140	128	3025	0.51
15	3~	400	50	900	385	0.59	59	67	70	4075	206	2400	0.83
16	3~	400	50	900	346	0.53	59	67	71	2530	256	1490	1.03

Wired = Wiring · U = Voltage · 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 · q_V = Air flow · p_{fs} = Pressure increase

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