

K3G500-8317081582
8317081582

EC centrifugal module - RadiCal

backward-curved, single-intake
with support bracket

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Nominal data

Type	K3G500-8317081582	
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	1900
Power consumption	W	2850
Current draw	A	4.4
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

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



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Technical description

Size	500 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
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 legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - 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), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
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 61800-5-1; CE



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Approval

EAC ; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

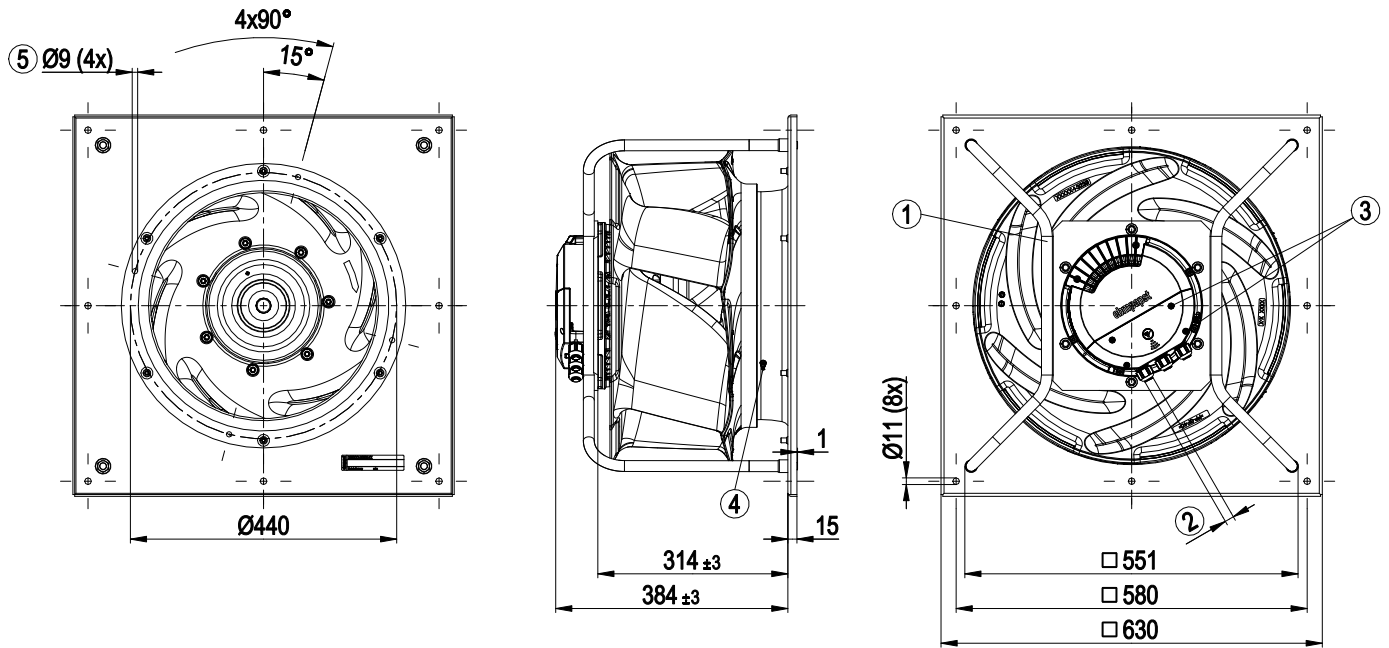


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Product drawing

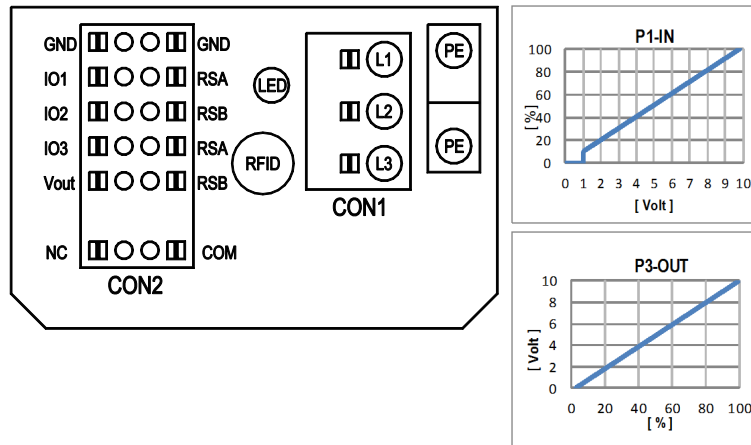


1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 375)
5	Attachment holes for FlowGrid (35505-2-2957 not included in scope of delivery)

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Connection diagram



No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see "Optional interface functions" table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

Terminal/plug assignment

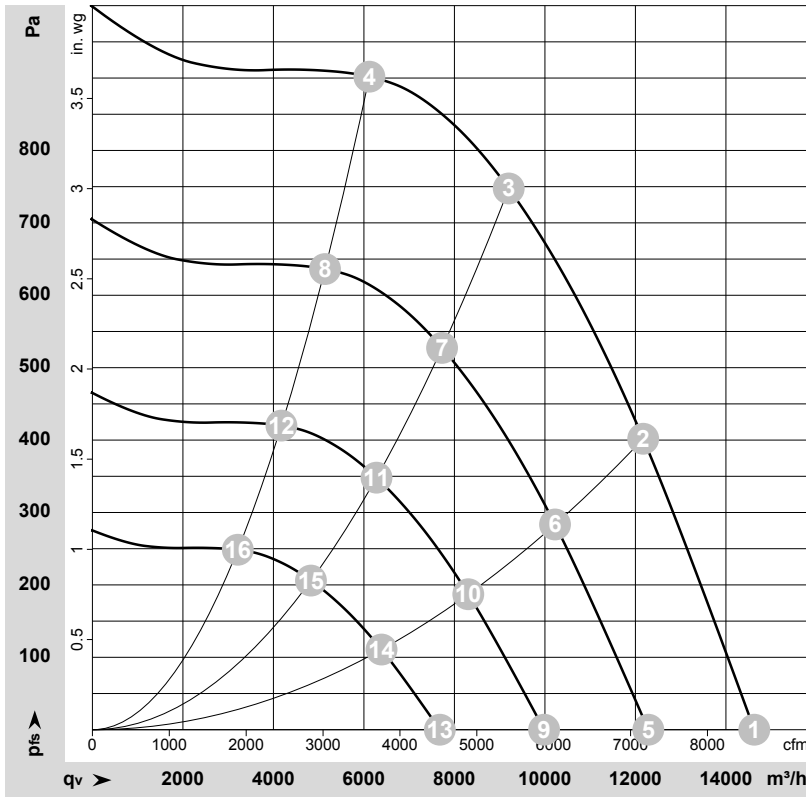
configurable option			configurable IO functions: normal/ inverse	MODBUS Register for IO mode configuration	electrical specification		CON2															
configurable IO mode		configurable IO mode																				
Din1 (active high): digital input		not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV																				
IO1	Ain1 0-10V/PWM: analog input				Ri=100K, characteristic curve parameterizable, f _{PWM} =1k..10kHz, SELV																	
	Tach out (open collector output)				U _{max} =50VDC, I _{max} =20mA, SELV																	
	Diagnostics out (open collector output)				U _{max} =50VDC, I _{max} =20mA, SELV																	
IO2	Din2 (active high): digital input				not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV																	
	Ain2 0-10V/PWM: analog input				Ri=100K, characteristic curve parameterizable, f _{PWM} =1k..10kHz, SELV																	
	Ain2 4-20mA: analog input				Ri=125R, characteristic curve parameterizable, SELV																	
IO3	Din3 (active high): digital input				not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV																	
	Din3 (active low): digital input		not active: pin open or applied voltage < 1,5VDC, SELV active: applied voltage 3,5-50VDC, SELV																			
	PWMIn3: digital input		not active: pin open or applied voltage < 1,5VDC, SELV active: applied voltage < 1,5VDC, SELV																			
IO3	Aout3 0-10V: analog output		function parameterizable, max. 5mA, max output frequency 300Hz, SELV																			
	Tacho out (pulses), analog output		0-10V/max. 5mA, max output frequency 300Hz, SELV																			
	Diagnostics out (pulses)		0-10V/max. 5mA, max output frequency 300Hz, SELV																			
RSA	RS485 bus connection,		MODBUS RTU, specification V6.0, SELV																			
RSB	voltage output		voltage parameterizable 3.3...24VDC +/- 5.5%, P _{max} =800mW, short-circuit-proof, supply for external devices, SELV																			
Yout	alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage		15...50VDC																			

D101 [...] source: set value	D104 [...] switch: parameter set: #1 / #2	D12E [...] switch: control function: heating (pos.), cooling (neg.)	D148 [...] switch: direction of rotation: cw / ccw	D16C [...] switch: set value source	D16A [...] switch: fan enable / disable	(selected directly via IO mode)	(selected directly via IO mode)	D130 [0] signal: fan modulation level %	D130 [1] signal: actual speed	D130 [2] signal: system modulation level %	D130 [5] signal: remote control output 0-10V	D00C [1] pulse input for auto-addressing	D130 [4] pulse output for auto-addressing
OUTPUT													

◦ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

Curves: Air performance 50 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: 13267

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.

Fan performance

	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)	m³/h	Pa	cfm	in. wg
1	3~	400	50	1900	1648	2.61	82	89	92	14625	0	8610	0.00
2	3~	400	50	1900	2479	3.83	76	83	88	12170	400	7165	1.61
3	3~	400	50	1900	2850	4.40	71	78	85	9200	750	5415	3.01
4	3~	400	50	1900	2627	4.05	75	82	87	6120	900	3600	3.61
5	3~	400	50	1600	976	1.55	77	85	88	12285	0	7230	0.00
6	3~	400	50	1600	1469	2.27	71	78	84	10225	285	6015	1.14
7	3~	400	50	1600	1685	2.59	66	74	81	7725	528	4550	2.12
8	3~	400	50	1600	1557	2.40	71	78	83	5140	638	3025	2.56
9	3~	400	50	1300	524	0.83	72	79	83	9980	0	5875	0.00
10	3~	400	50	1300	788	1.22	66	73	79	8305	188	4890	0.75
11	3~	400	50	1300	904	1.39	61	69	76	6280	349	3695	1.40
12	3~	400	50	1300	835	1.29	65	73	78	4175	421	2460	1.69
13	3~	400	50	1000	238	0.38	65	73	76	7680	0	4520	0.00
14	3~	400	50	1000	359	0.55	60	67	72	6390	111	3760	0.45
15	3~	400	50	1000	411	0.63	54	62	69	4830	206	2840	0.83
16	3~	400	50	1000	380	0.59	59	66	71	3215	249	1890	1.00

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