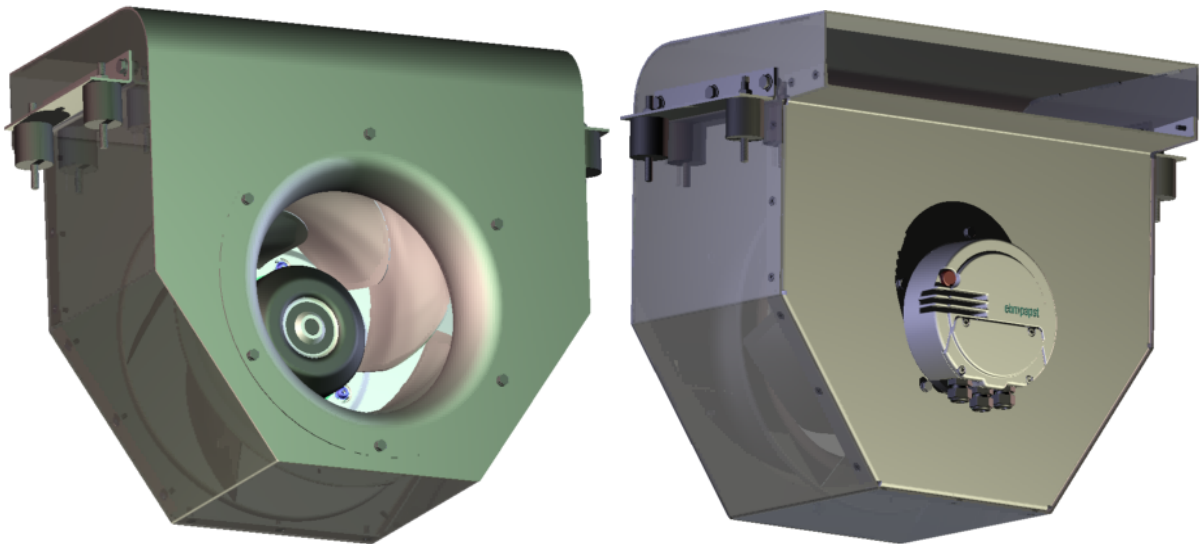


# EC RADIAL FAN

with integrated commutation electronics



*RC-R3G 355 EC AL56-01*



Gottlieb-Dunkel-Str.20/21  
D-12099 Berlin-Tempelhof

**Product:** Radial fan RC-R3G 355 EC AI 56-01, single-inlet

**Item-No.:** RC-R3G 355

**Technical data/**

**Description:**

Nominal voltage	3~400 V AC
Voltage range	3~380-480 V AC
Frequency	50/60 Hz +/- 8 %
Max. power consumption	0.94 kW
Max. starting current	2 A
Volume flow	see performance curve
Static pressure increase	see performance curve
Operating point	1800 m <sup>3</sup> /h at 750-800 Pa
Rated speed	2215 min <sup>-1</sup>
Motor protection type	IP 54 according to EN 60529
Insulation class	F
Operating temperature	-25...+60 °C
Weight	25 kg
Motor construction type	EC motor
Motor	M3G112EA
Bearing	maintenance-free ball bearings
Expected service life	40,000 hours of operation
Motor material	electronic casing: die-cast aluminium rotor: lacquered black
Impeller material	aluminium sheet, laser-welded 6 impeller blades
Casing material	sheet steel A2, colour-coated RAL7022
Inlet cone material	sendzimir-galvanized sheet steel
Electrical connection	via terminal strip and cable connection
Certifications	UL, CSA, VDE, CE, CCC, GOST
EMC	interference emission acc. to EN 61000-6-3 immunity to interference acc. to EN 61000-6-2 harmonic effects acc. to EN 61000-3-2/3
Shock and vibration tests	according to EN 61373
Protection class	I according to EN 61800-5-1
Balancing quality	Q 6.3
Mode of operation	S1 (continuous operation)
Direction of rotation	clockwise (viewed from rotor)
Direction of movement	inlet on rotor side
Mounting position	rotor axis horizontal
Area of application	railway technology

**Technical  
equipment:**

PFC	passive
PID controller	integrated
Control input	0-10 V DC / PWM
Sensor input	0-10 V and 4-20 mA, respectively
Slave output	0-10 V max. 3 mA
Output	20 V DC (+/- 20 %) max. 50 mA
Output	10 V DC (+ 10 %) max. 10 mA
RS485 interface	ebm BUS
Overtemperature protection	electronics / motor
Alarm relay, motor current limit, lock-up protection, soft start, undervoltage and phase failure detection	

**Connection diagram:**

KL 3										KL2			KL1			PE			
RSA	RSB	RSA	RSB	GND	0-10 V PWM	4-20 mA	+20 V	+10 V	0-10 V PWM	GND	OUT	NO	COM	NC	L1	L2	L3	PE	PE
Clamp	Connection	Configuration/Function																	
PE	PE	Ground wire																	
KL1	L3	Mains; L3																	
	L2	Mains; L2																	
	L1	Mains; L1																	
KL2	NC	Alarm relay, NC contact in case of error																	
	COM	Alarm relay, COMMON (2A, 250 VAC, AC1)																	
	NO	Alarm relay, CO contact in case of error																	
KL3	OUT	Master-Output 0-10 V max. 3mA																	
	GND	GND																	
	0-10 V / PWM	Control input / actual value input (impedance 100 kΩ)																	
	+10 V	Supply of external potentiometer, 10 VDC (+10 %) @ 10 mA																	
	+20 V	Supply of external sensor, 20 VDC (±20 %) @ 50 mA																	
	4-20 mA	Control input / actual value input																	
	0-10 V / PWM	Control input / actual value input																	
	GND	GND																	
	RSB	RS485 interface for BUS; RS B																	
	RSA	RS485 interface for BUS; RS A																	
RSB	RS485 interface for BUS; RS B																		
RSA	RS485 interface for BUS; RS A																		

**Particularities:**

The fan (EC motor) is continuously variable through analog or digital inputs (externally by means of potentiometer, sensor or personal computer). Thus, the performance of the fan can be optimally adjusted to the respective area of application.

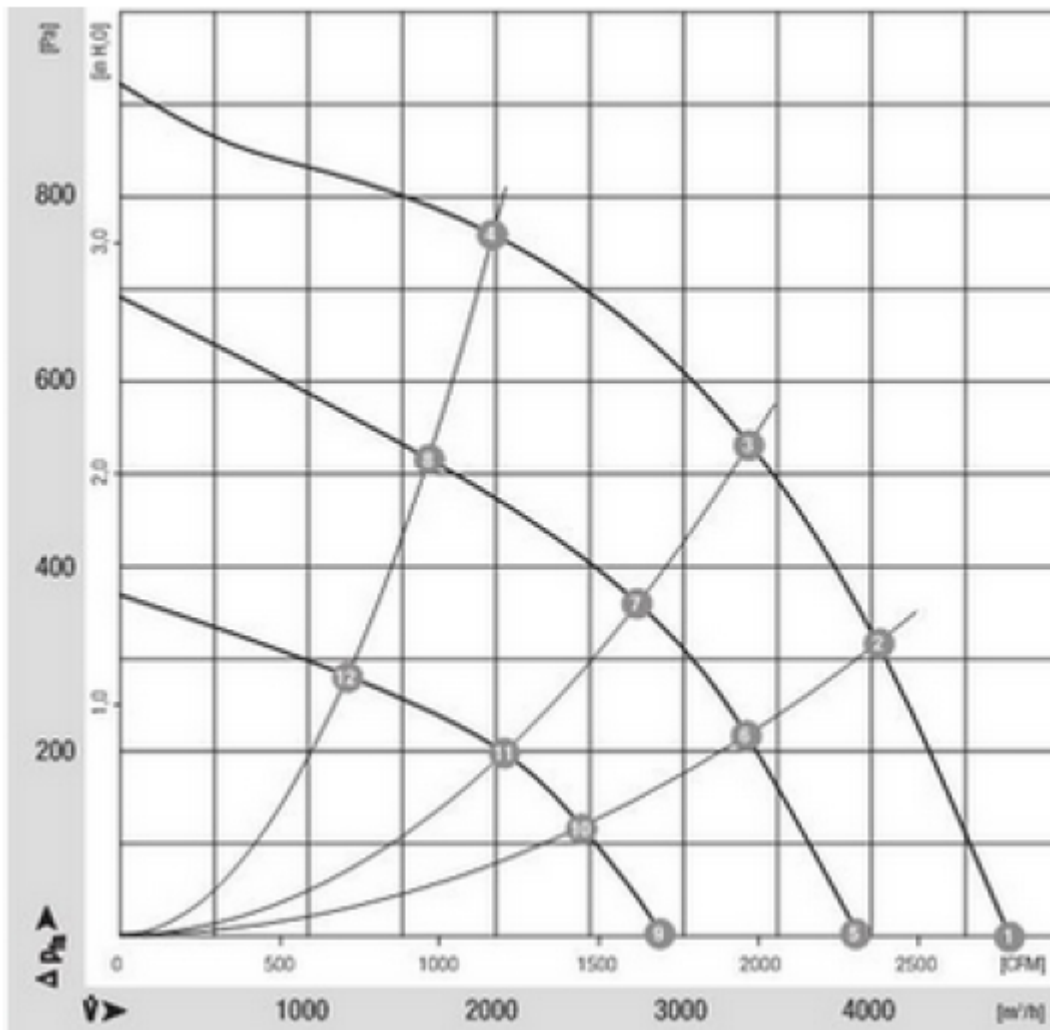
A master/slave operation is possible in case several fans are connected in series. Master/slave function means that a signal (actual value) from an external sensor (pressure, temperature, volume flow), is only connected to one fan (the master), which supplies the signals for the other fans (slaves) by means of its deposited setting parameters (target value), which are then controlled at the same speed as the master.

The thermal load of the ball-bearings in the motor is reduced by the high efficiency of the brushless drive, which results in a considerably increased service life of the fan.

The device is equipped with monitoring and protection functions preventing:

- Overtemperature electronics
- Overtemperature motor
- Rotor position recording failure
- Blocked rotor
- Power supply undervoltage
- Phase failure

**Performance curve: pressure over volume flow at 50/60 Hz**



	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	I [A]	ntL [%]
1	2205	700	1.3	-
2	2215	880	1.4	48
3	2215	940	1.5	59
4	2215	850	1.4	53
5	1825	380	0.7	-
6	1805	470	0.9	52
7	1790	490	0.9	65
8	1800	460	0.9	58
9	1335	170	0.4	-
10	1315	200	0.4	57
11	1315	210	0.4	69
12	1310	190	0.4	60

