R3G560-RA25-21

EC centrifugal fan - RadiCal

backward-curved, single-intake

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Nominal data

Type	**R3G560-RA25-21**
Motor	**M3G150-FF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1340
Power consumption	W	1500
Current draw	A	6.7
Min. ambient temperature	°C	-25
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 ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	63.5	53.3
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		72.2	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.5
09 Air flow q_v	m^3/h	7240
09 Pressure increase p_{fs}	Pa	444
10 Speed (rpm) n	min^{-1}	1300
11 Specific ratio*		1.00

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-179863

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Technical description

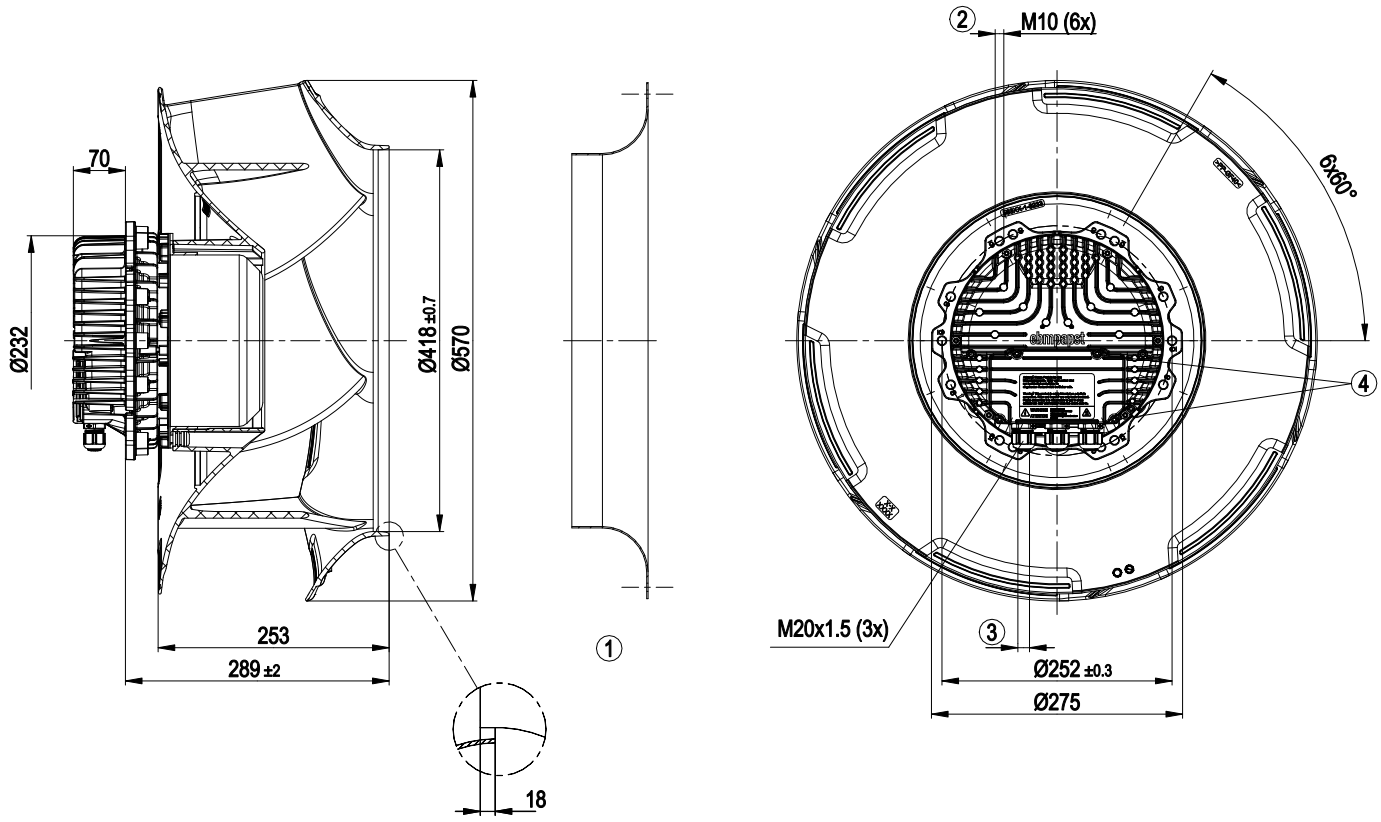
Weight	26 kg
Fan size	560 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-1
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	On rotor side
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 - Tach output - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from supply - 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	Via 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
Approval	C22.2 No.77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730

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Product drawing



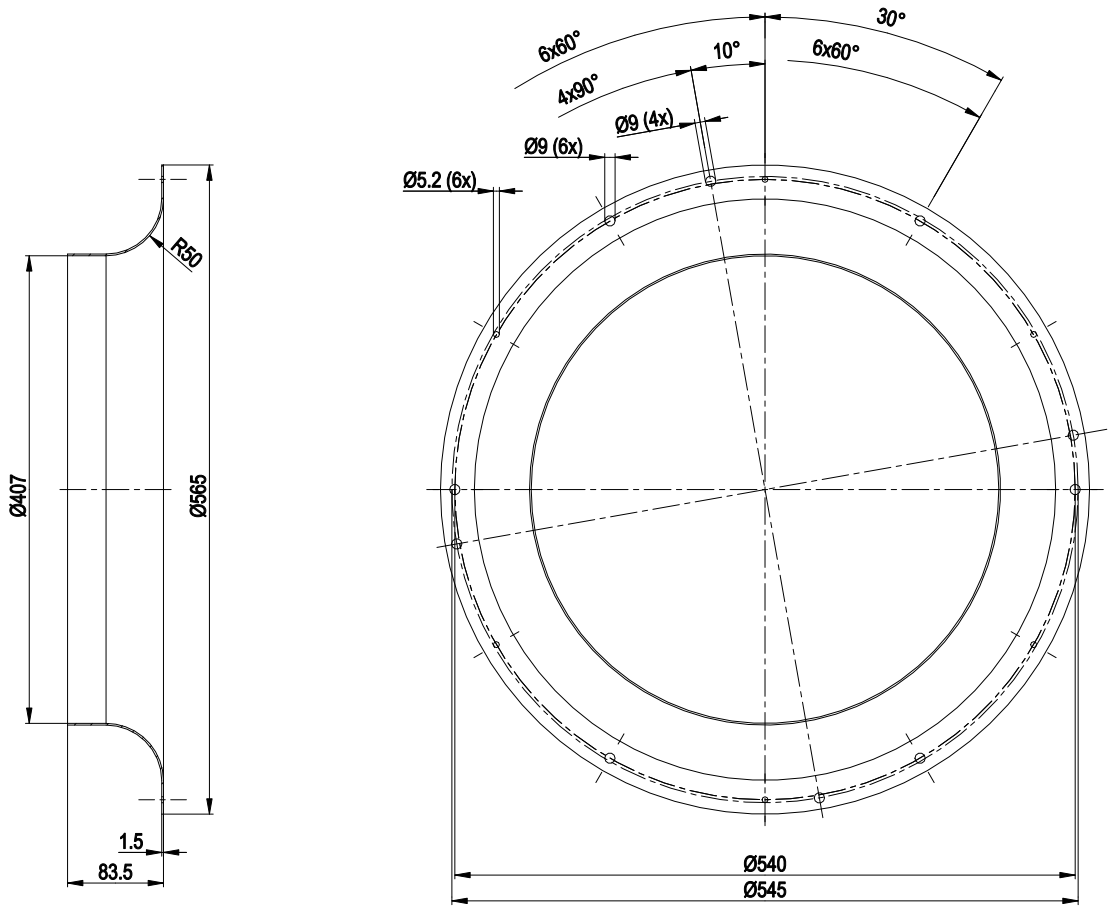
1	Accessory part: inlet ring 54482-2-4013 not included in scope of delivery
2	Max. clearance for screw 25 mm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4±0.6 Nm
4	Tightening torque 3.5 ± 0.5 Nm

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Accessory part



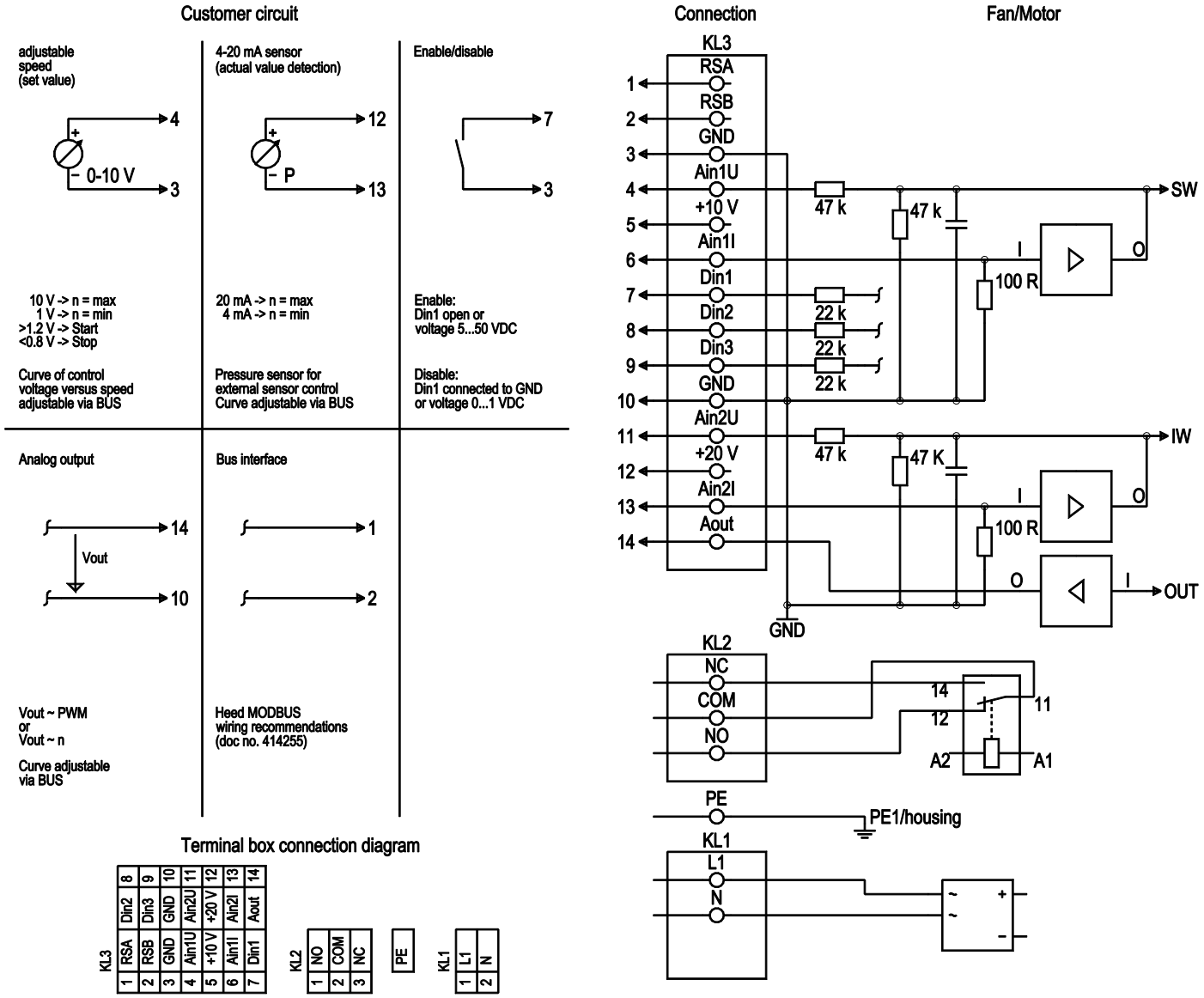
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Connection diagram



Terminal box connection diagram

No.	Conn.	Designation	Function/assignment
KL1	1	L1	Supply connection, power supply; for nominal voltage range see technical data
KL1	2	N	Supply connection, power supply; for nominal voltage range see technical data
PE		PE	Ground connection, PE connection
KL2	1	NO	Status relay, floating status contact, make for failure
KL2	2	COM	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
KL3	1	RSA	Bus connection RS485, RSA, MODBUS-RTU; SELV
KL3	2	RSB	Bus connection RS485, RSB, MODBUS-RTU; SELV
KL3	3	GND	Reference ground for control interface; SELV
KL3	4	Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV

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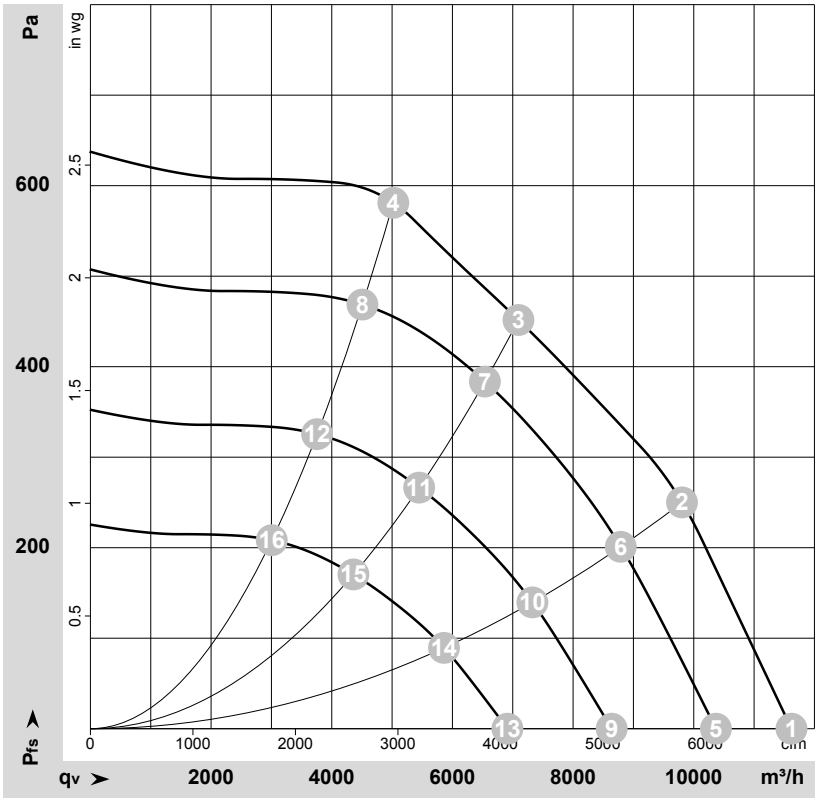
No.	Conn.	Designation	Function/assignment
KL3	5	+ 10 V	Fixed voltage output 10 VDC, + 10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometers); SELV
KL3	6	Ain1 I	Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1 U; SELV
KL3	7	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset function: triggers software reset after a level change to < 1 VDC; SELV
KL3	8	Din2	Digital input 2: Switching parameter sets 1/2, according to EEPROM setting, the valid or used parameter set can be selected via bus or via digital input DIN2. Parameter set 1: pin open or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV
KL3	9	Din3	Digital input 3: according to EEPROM setting, the integrated controller's direction of action can be selected via bus or digital input Din3; normal: pin open or applied voltage 5-50 VDC inverse: bridge to GND or applied voltage < 1 VDC; SELV
KL3	10	GND	Reference ground for control interface, SELV
KL3	11	Ain2 U	Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2 I; SELV
KL3	12	+ 20 V	Fixed voltage output 20 VDC, + 20 V +25/-10%, max. 50 mA, short-circuit-proof, power supply for ext. devices (e.g. sensors); SELV Alternatively: +24 VDC input for parameterization without line voltage
KL3	13	Ain2 I	Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2 U; SELV
KL3	14	Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-179863-1

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

	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	inH2O
1	230	50	1340	1145	5.03	75	83	86	11620	0	6840	0.00
2	230	50	1340	1469	6.46	71	79	83	9805	250	5770	1.00
3	230	50	1340	1500	6.70	66	74	79	7095	450	4175	1.81
4	230	50	1340	1480	6.47	69	77	81	5020	580	2955	2.33
5	230	50	1200	813	3.57	73	80	83	10365	0	6100	0.00
6	230	50	1200	1052	4.63	68	76	80	8790	203	5175	0.81
7	230	50	1200	1184	5.20	64	72	77	6540	385	3850	1.55
8	230	50	1200	1076	4.67	66	74	79	4510	470	2655	1.89
9	230	50	1000	471	2.07	68	76	79	8640	0	5085	0.00
10	230	50	1000	609	2.68	63	71	75	7325	141	4310	0.57
11	230	50	1000	685	3.01	60	68	72	5450	268	3205	1.08
12	230	50	1000	622	2.70	61	69	74	3755	326	2210	1.31
13	230	50	800	241	1.06	62	70	73	6910	0	4070	0.00
14	230	50	800	312	1.37	58	66	70	5860	90	3450	0.36
15	230	50	800	351	1.54	54	62	66	4360	171	2565	0.69
16	230	50	800	319	1.38	56	64	69	3005	209	1770	0.84

U = Power supply · 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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